9 Mount the CDI-4000 on the top of the disk holding tray (solder side facing the drives and J1 facing the back—where the floating connector will be placed); put four screws and spacers into the disk holding tray through the CDI-4000. See Figure 4-25.

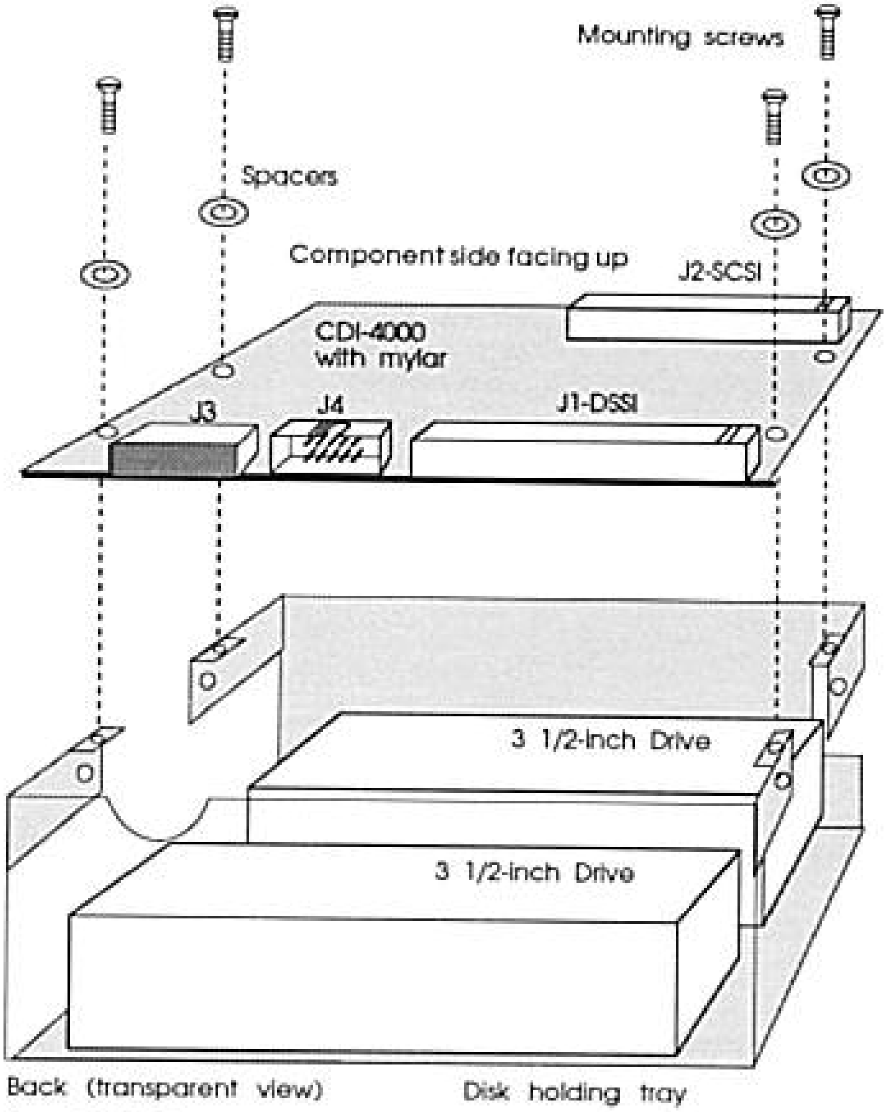


Figure 4-25: CDI-4000-SA2 board mounting

10 Locate the left side bracket and align it to the right side of the disk holding tray when facing the back of the tray. Put two screws into the holding tray through the left bracket. See Figure 4-26.

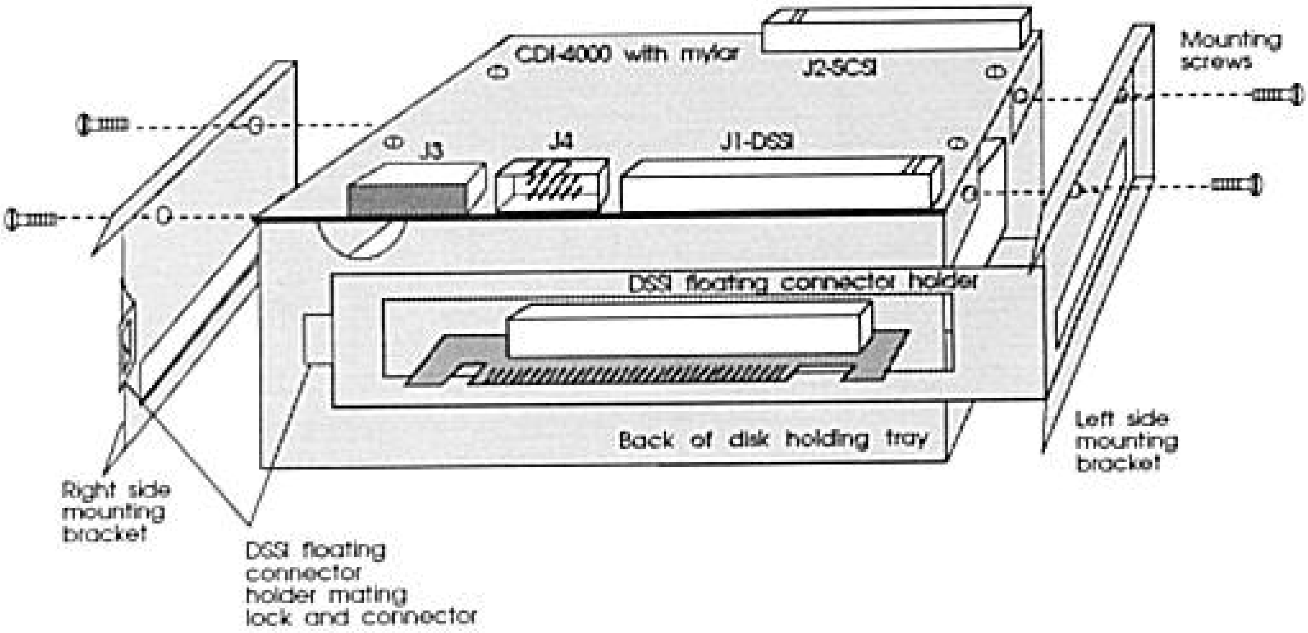

CDI-4000 with mylar
J2-SCSI
Mounting screws
J3
J4
J1-DSSI
DSSI floating connector holder
Back of disk holding tray
Left side mounting bracket
Right side mounting bracket
DSSI floating connector holder mating lock and connector

Figure 4-26: CDI-4000-SA2 right bracket installation

11 Insert the mating connector (tab) on the DSSI floating connector holder into the lock in the right side bracket.

12 Align the right side bracket to the left side of the disk holding tray when facing the back of the tray. Put two screws into the disk holding tray through the right bracket. See Figure 4-26.

13 Turn the drive and the ISE assembly so that the CDI-4000 faces the left and the floating connector faces the system. See Figure 4-27.

14 Align the ISE rails with the rail slots in the system and slide the ISE with the drive into the system until the floating connector is tighly in the DSSI connector in the backplane of the system. See Figure 4-27.

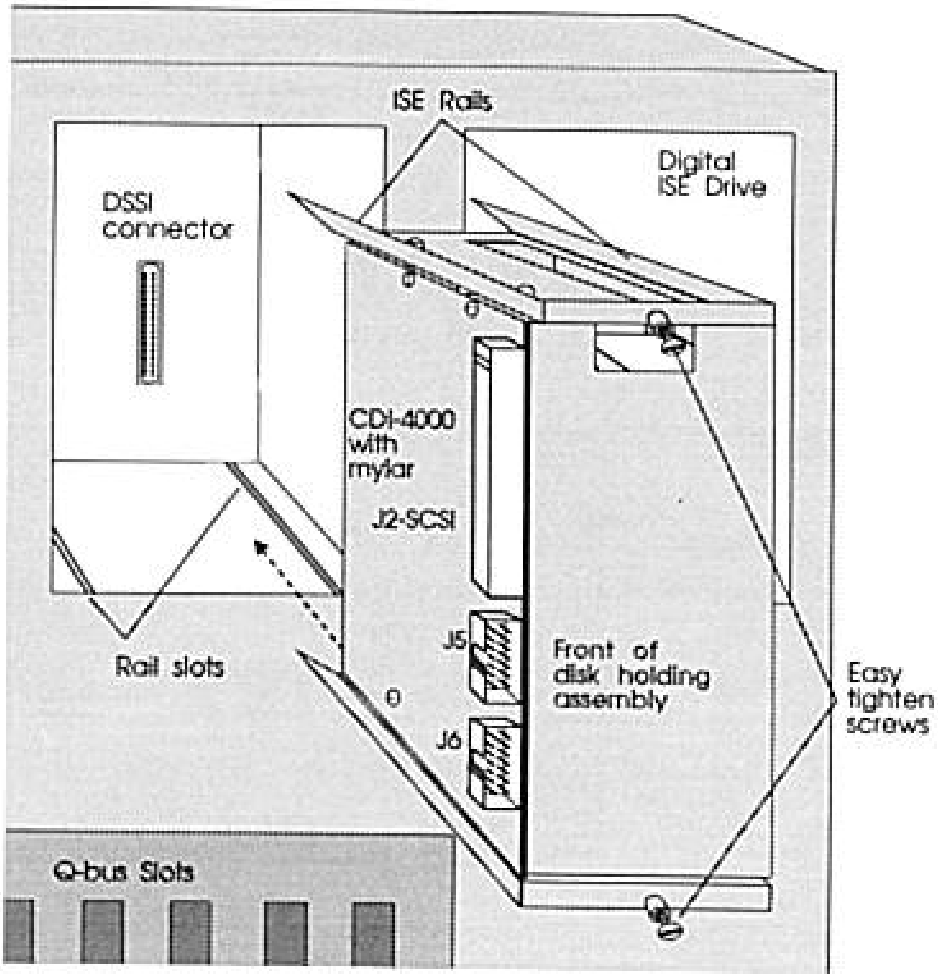


Figure 4-27: CDI-4000-SA2 ISE and drive alignment

15 Tighten the easy tighten screws now located on the top and bottom of the ISE assembly.

16 Connect one end of the 14-pin cable to J6 of the CDI-4000 and the other end into the back of the ISE front panel display as shown in Figure 4-28.

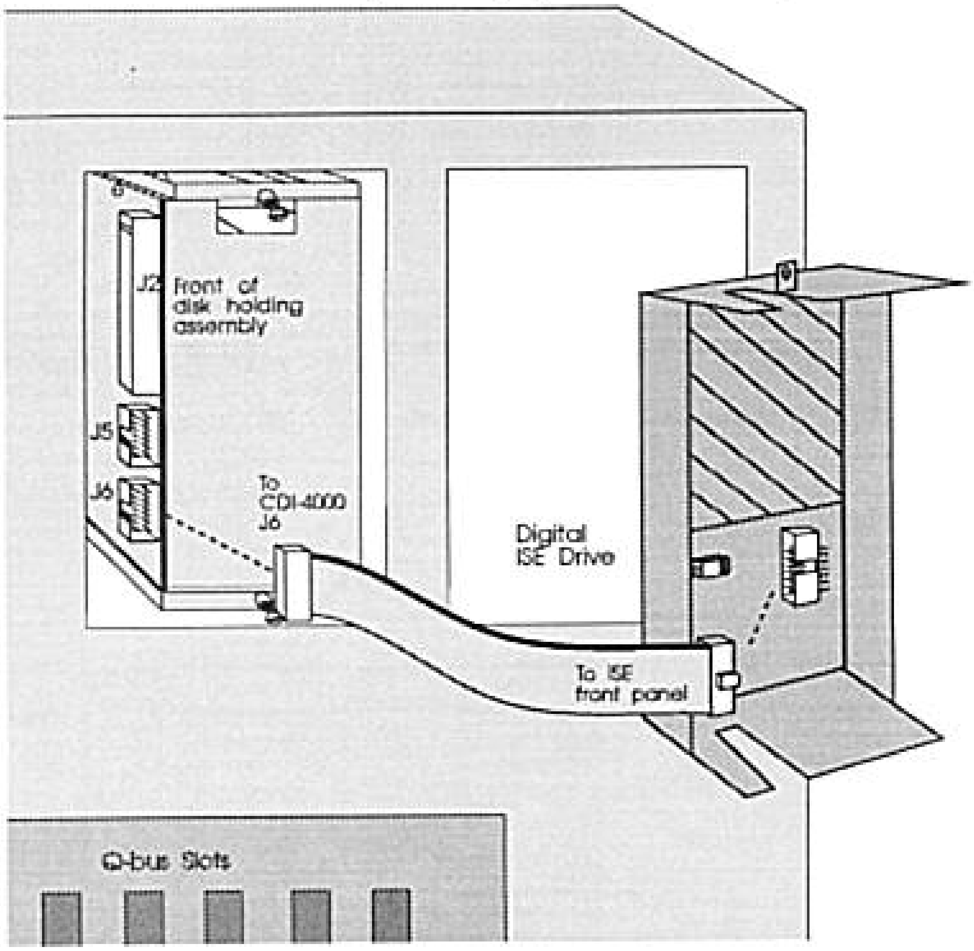


Figure 4-28: CDI-4000-SA2 ISE connections

17 Align the back of the front panel display with the ISE assembly and slide the two tabs at the bottom of the ISE front panel display inside the system chassis; then slide the top into the system; see Figure 4-29.

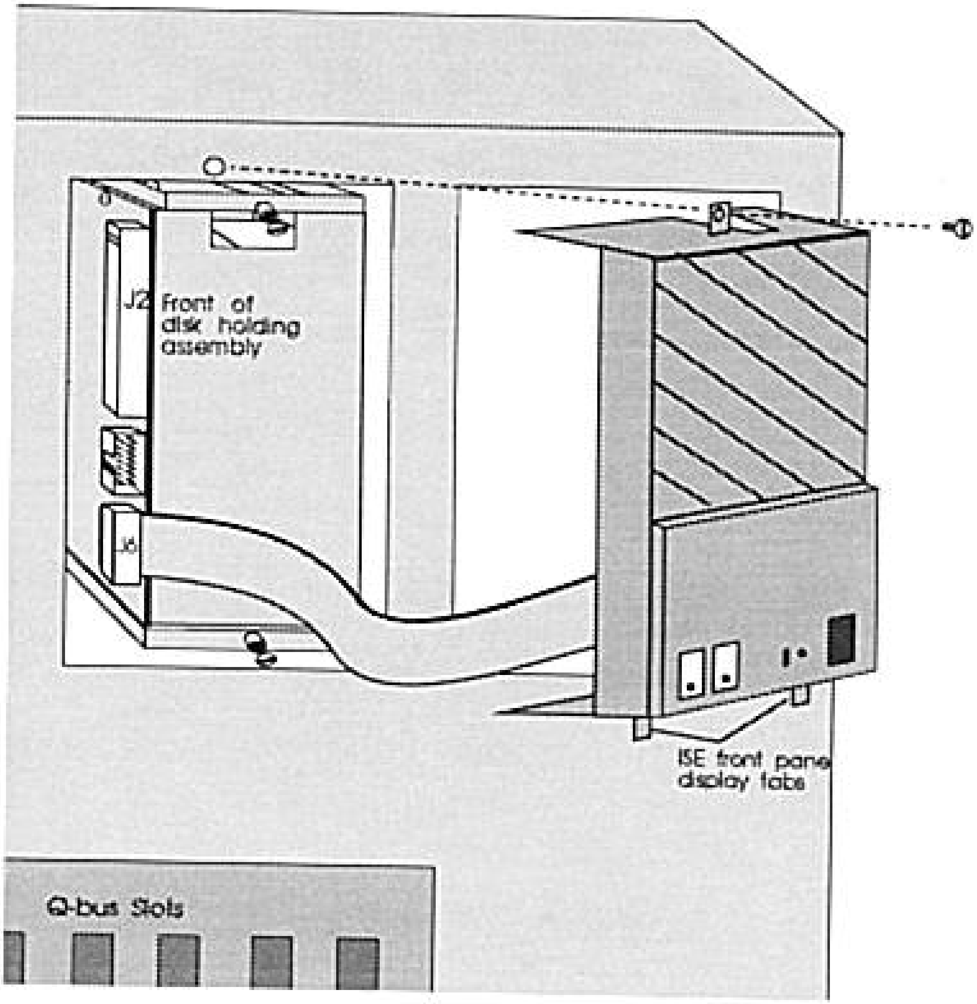


Figure 4-29: CDI-4000-SA2 ISE front panel installation

18 Put one screw into the system chassis through the top hole in the ISE front panel display; see Figure 4-29.

5

CDI-4000-SB Installation

CDI-4000-SB Installation involves installing the CDI-4000 and universal 5¼-inch drives into a MicroVAX 3300 or 3400. For installing SCSI devices, terminating each end of the DSSI and SCSI buses, and identifying each port see Chapter 3, "Determining DSSI Node" and "Hardware Configuration."

Installing CDI-4000-SB into MicroVAX 3300 and 3400

If you have a MicroVAX 3300 or 3400, the CDI-4000-SB, and a disk drive, follow these procedures to install the CDI-4000 and the drive into the MicroVAX disk drive cavity. If you have a MicroVAX 3500, 3600, 3800, 3900, you must use a KFQSA controller attached to the CDI-4000.

1 Carefully unpack the drive from its frame and remove the four screws (two located on each side of the drive) if applicable.

WARNING **Be sure to wear anti-static wrist straps or equivalent to protect the drive and the CDI-4000 from electrostatic damage.**

2 Assemble the mylar insulator to the solder side of the CDI-4000 pacing the two plastic rivets in the corner holes next to J1 and J3. See Figure 5-1.

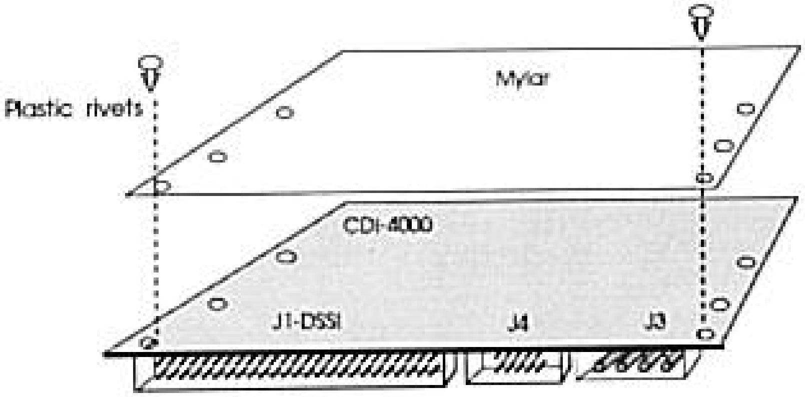


Figure 5-1: Connecting mylar to the CDI-4000

3 Invert the CDI-4000 with J1 next to the SCSI connector on the drive.

4 Connect the frayed end of the SCSI cable to J2 on the CDI-4000 and the other end to the SCSI connector on the drive. Place the flat portion of cable between the CDI-4000 and drive. See Figure 5-2.

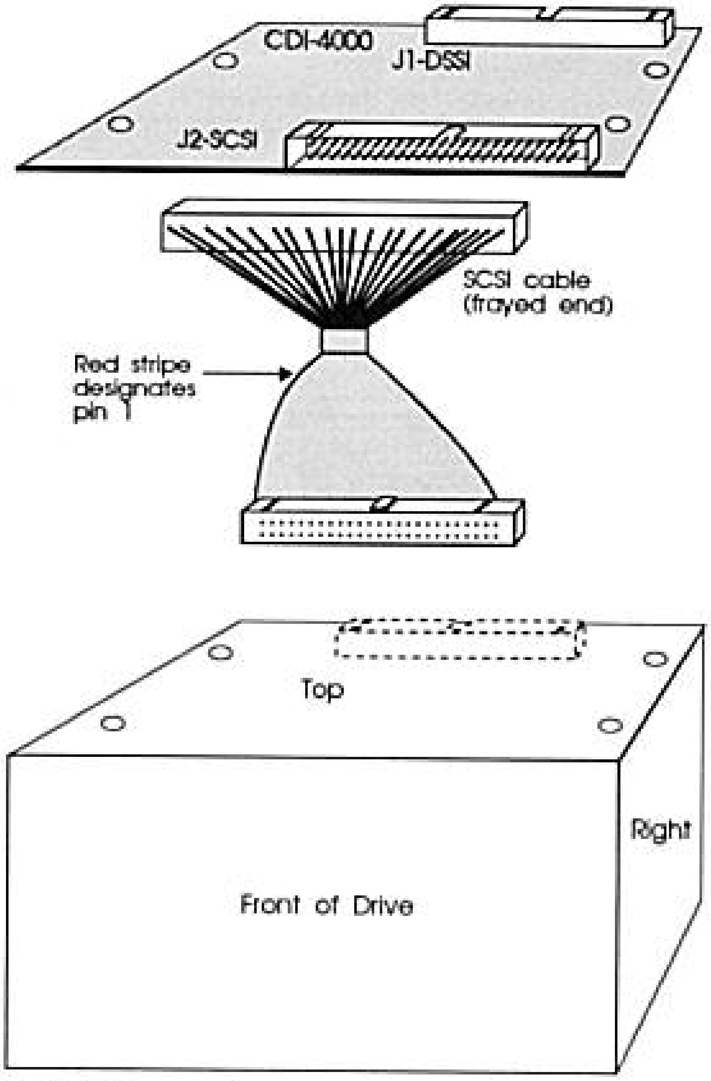


Figure 5-2: SCSI cable connection

5 Mount the CDI-4000 on top of the drive with J1 next to the SCSI connector on the drive.

  a Place washers between the screws and the CDI-4000.

  b Place spacers between the CDI-4000 and the drive.

  c Put four screws into the drive through the CDI-4000, two on each side. See Figure 5-3.

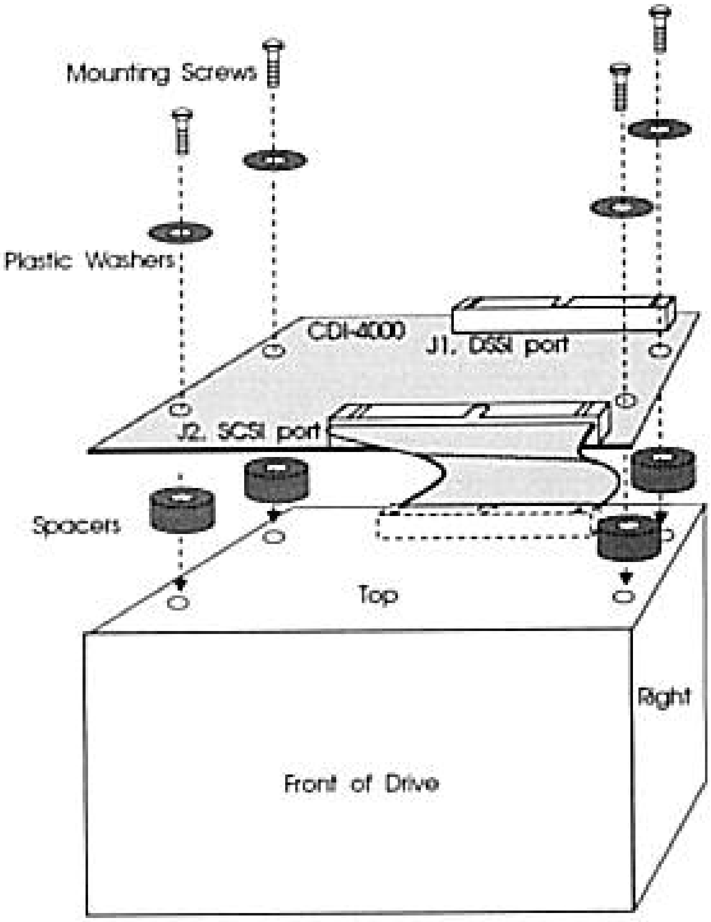


Figure 5-3: Mounting the CDI-4000 onto the drive

6 Locate the disk drive mounting rails with the MicroVAX mounting kit. Separate the disk drive mounting rails from the disk drive mounting brackets by loosening the easy tighten screws on the front of the mounting brackets.

7 Locate the mounting bracket for the left side of the disk drive. Put two screws into left side of the disk drive through the two holes in the mounting bracket (as indicated in Figure 5-4) to secure the mounting bracket to the drive.

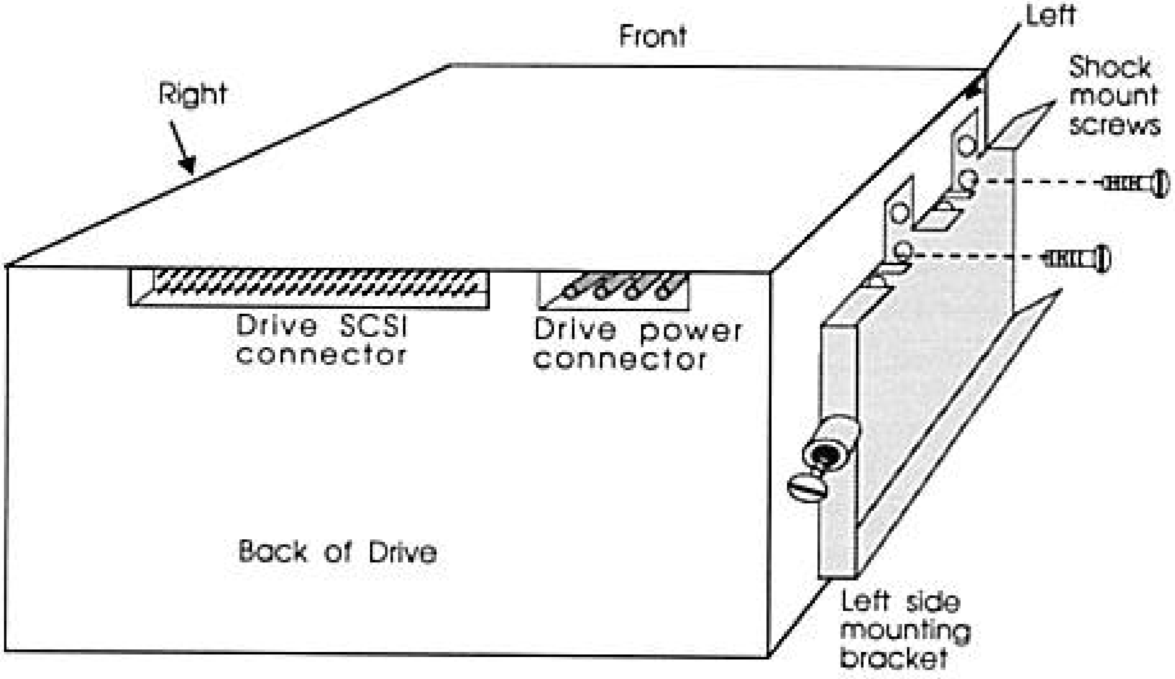


Figure 5-4: Mounting the brackets to the drive

8 Locate the mounting bracket for the right side of the disk drive. Put two screws into the right side of the disk drive through the two holes in the mounting bracket (as indicated in Figure 5-4) to secure the mounting bracket to the drive.

9 Remove the four screws in the four corners of the MicroVAX front panel. Remove the front panel of the MicroVAX. See Figure 5-5.

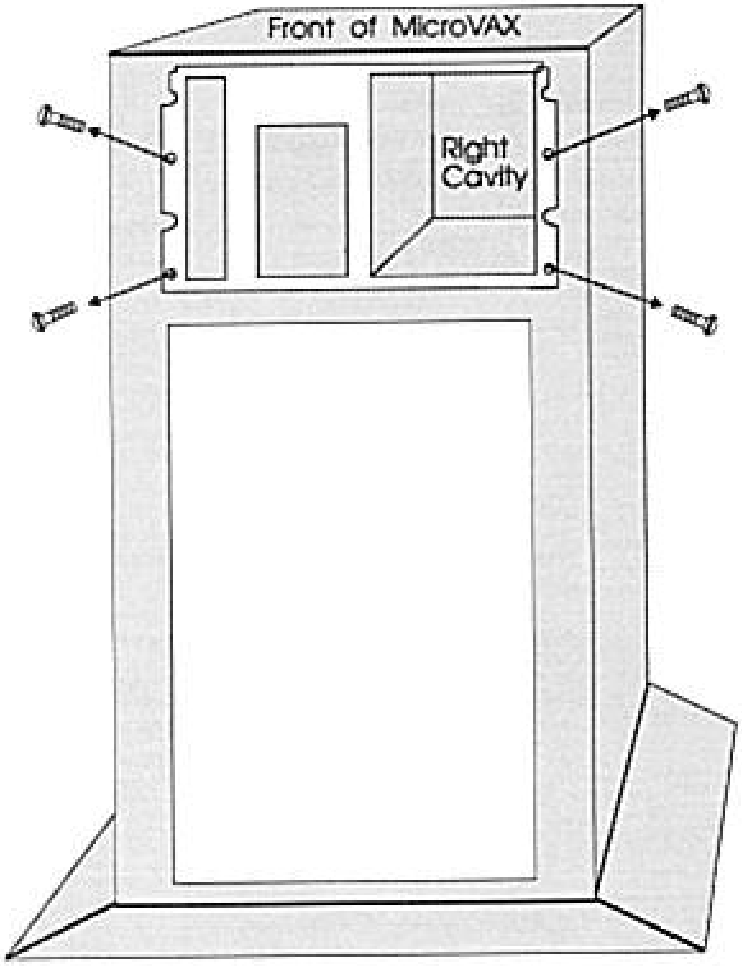


Figure 5-5: Removing the MicroVAX front panel

10 Loosen the screw on the top right of the DSSI control panel and take out the DSSI control panel.

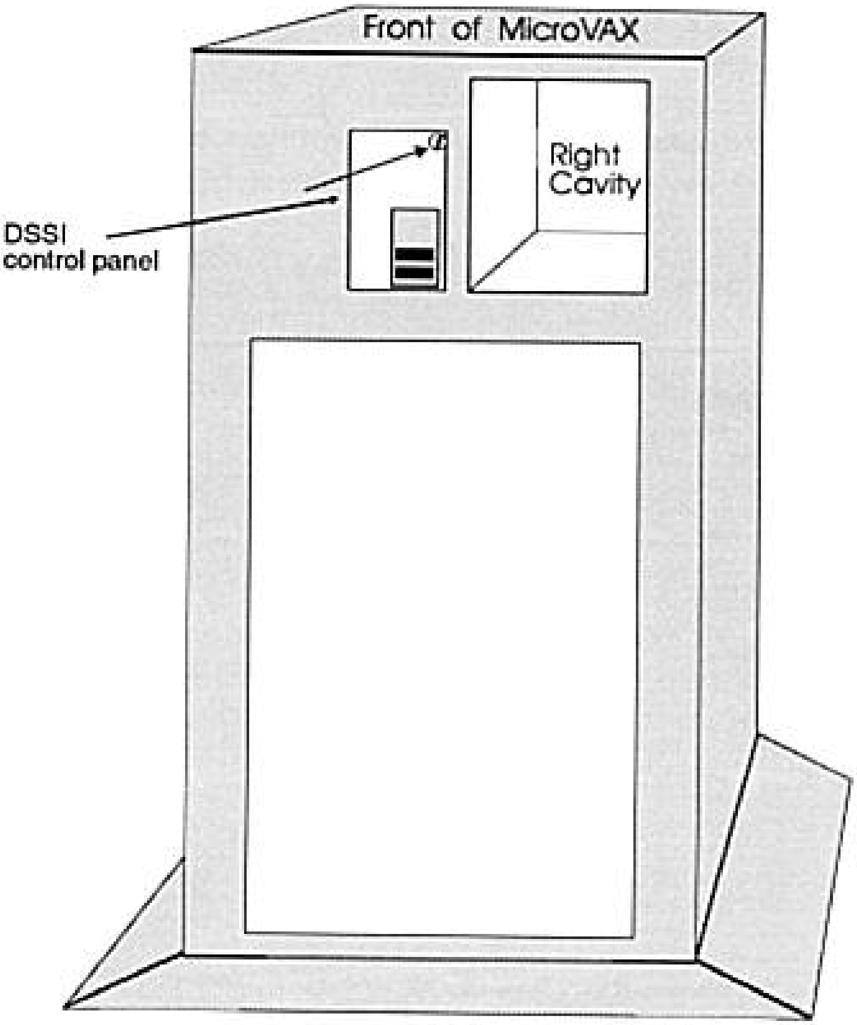


Figure 5-6: Removing the DSSI control panel

11 If you are installing the drive into the left disk drive cavity, follow these instructions (right cavity does not need rail installed):

a Place one disk drive mounting rail into the bottom center of the left MicroVAX disk drive cavity—aligning with the holes in the center of the cavity.

b Put two screws into the bottom of the MicroVAX cavity through the disk drive mounting rail. There are three sets of holes in the front and the back of the cavity; be sure you are putting the screws into the center holes. See Figure 5-7.

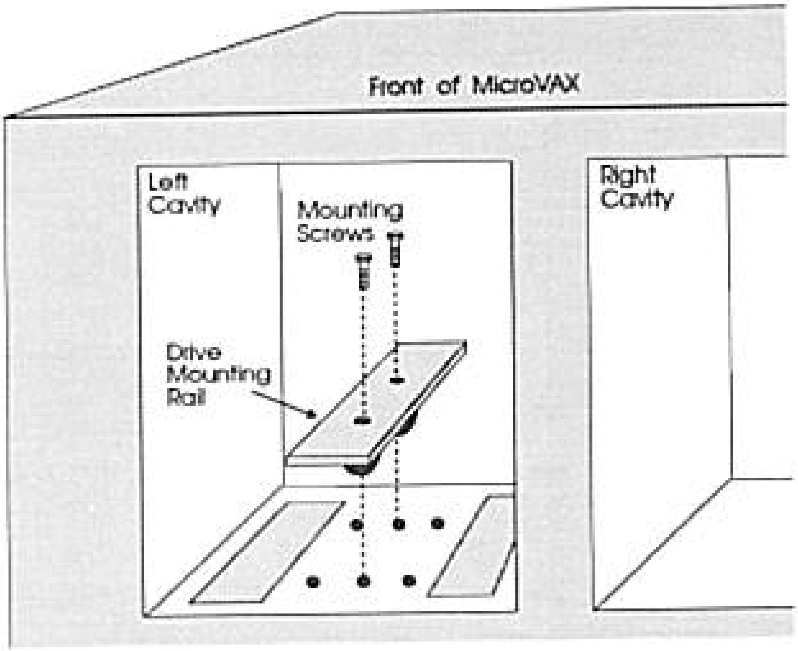


Figure 5-7: Installing the bracket into the MV cavity

c Place the other disk drive mounting rail into the top center of the left MicroVAX disk drive cavity—aligning with the holes in the center of the cavity.

12 Slide the drive into the cavity with the CDI-4000 facing the right, aligning the drive mounting bracket with the drive mounting rails. See Figure 5-8.

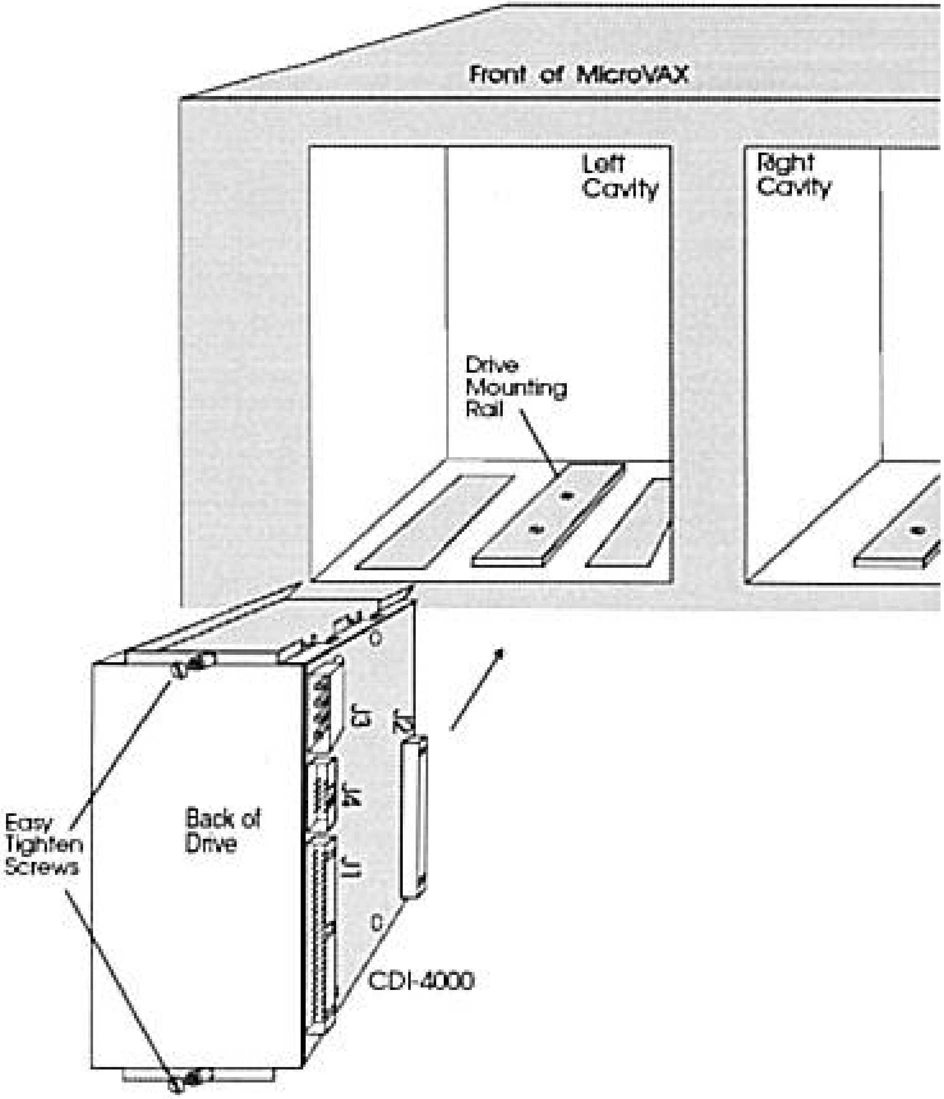


Figure 5-8: Sliding the drive into the cavity

13 Tighten the two easy tighten screws on the mounting bracket now located at the top and bottom of the cavity. See Figure 5-8.

14 Locate the CMD power cable adapter.
   - **a** Connect the female end to the CDI-4000 at J3.
   - **b** Connect the other female end to the disk drive power connector.
   - **c** Connect the male end into the power connector cable supplied by the MicroVAX. See Figure 5-9.

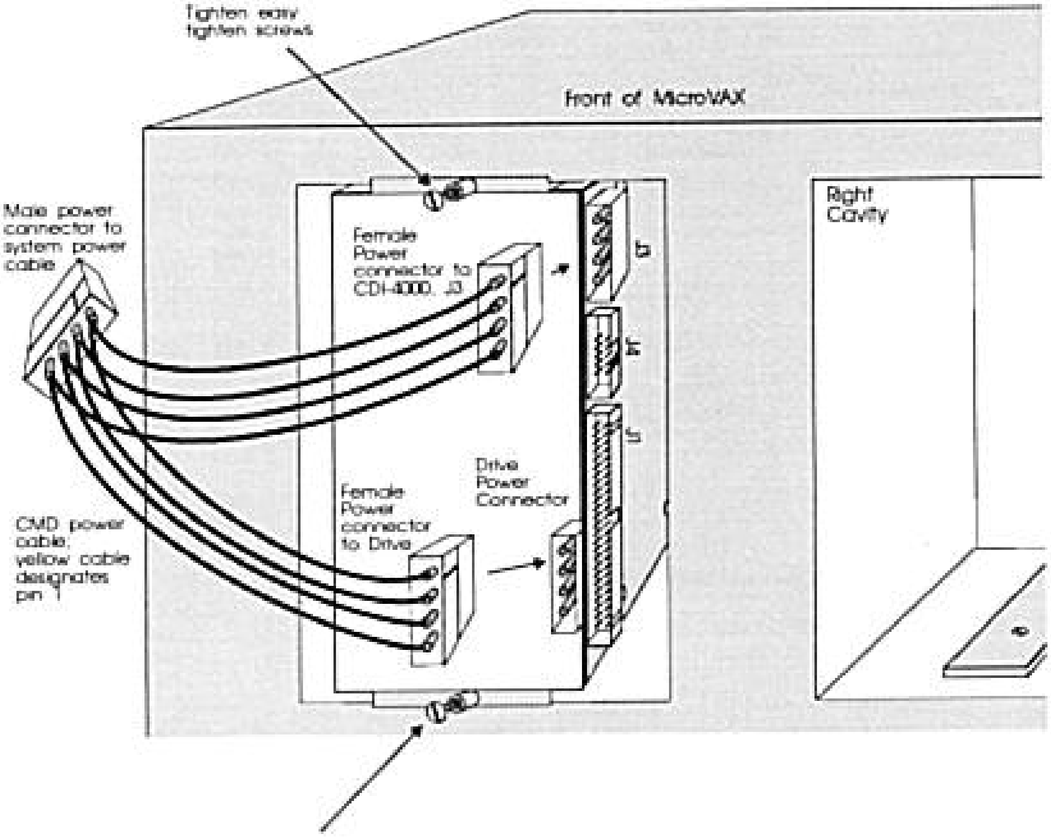

Tighten easy tighten screws
Front of MicroVAX
Male power connector to system power cable
Female Power connector to CDI-4000, J3
J3
J4
J1
Right Cavity
Drive Power Connector
Female Power connector to Drive
CMD power cable; yellow cable designates pin 1

Figure 5-9: Power connections

15 If the drive is in the *left cavity*, connect J1 on CDI-4000 (into the daisy chain) to the internal DSSI connector by using the DEC flat DSSI cable inside the MicroVAX.

If the drive is in the *right cavity*, use the CMD flat DSSI adapter cable and follow these instructions:
   - **a** Connect the middle female connector to J1 on the CDI-4000.
   - **b** Connect the female connector at one end of the adapter cable to the internal DSSI connector.
   - **c** Connect the male connector at the other end (of the CMD flat adapter cable) to an internal DSSI cable that routes to the outside of the MicroVAX chassis.

16 Replace the DSSI control panel of the MicroVAX and tighten the screw on the top right.

17 Replace the MicroVAX front panel and the four screws in the four corners of the MicroVAX front panel.

6

CDI-4000-SC Installation

CDI-4000-SC Installation involves installing the CDI-4000, the LCD Display Panel, and disk drives into a TRIMM DA40 or DA60. For installing SCSI devices, terminating each end of the DSSI and SCSI buses, and identifying each port see Chapter 3, "Determining DSSI Node" and "Hardware Configuration."

CDI-4000-SC Installation into TRIMM DA40 or DA60

If you have the CDI-4000-SC, install the LCD Display Panel and connect the CDI-4000 into TRIMM® DA40 or DA60 by following these instructions.

1. Make sure the DA40 or DA60 is powered **OFF**. Unplug the power cord from the DA40 or DA60 chassis.
2. Open the DA40 or DA60 as shown in DA40 or DA60 documentation. Remove the front cover of the DA40 or DA60 by pulling firmly from the left side first out towards you.

WARNING **If the LCD is already installed, be very careful when pulling out the front cover not to damage the LCD module which is located on the right side. Use a large screw driver to pry slowly apart from the chassis starting from the left side and then the right side while watching the LCD module from the back side of the front cover.**

3 Carefully unpack the drive from its frame and remove the four screws (located on the sides of the drive) if applicable.

WARNING **Be sure to wear anti-static wrist straps or equivalent to protect the drive and the CDI-4000 from electrostatic damage.**

4 Install all drives into the DA40 or DA60 as explained by DA40 or DA60 documentation.

5 Remove the four screws in the mounting rails located on top of the power supplies. Remove the mounting rails.

6 Place two CDI-4000 mounting brackets on top of the power supply and put two screws into the power supply through each bracket. See Figure 6-1.

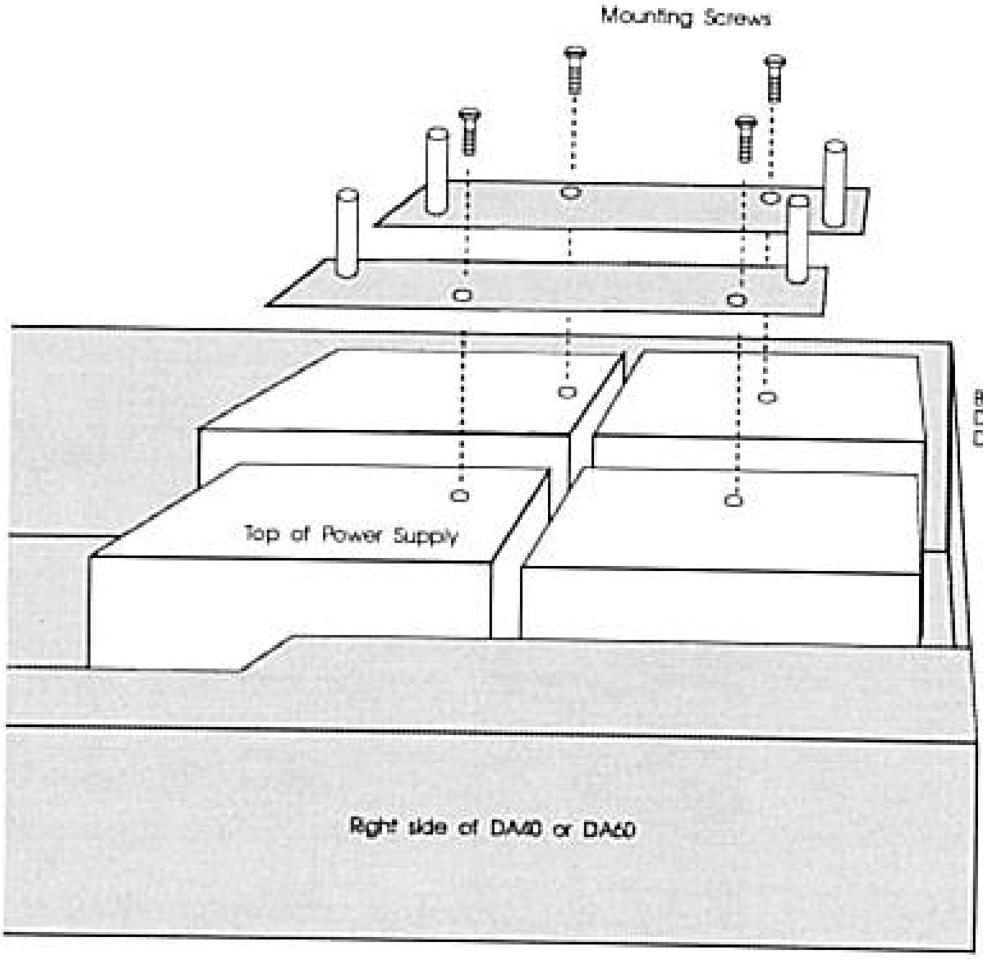


Figure 6-1: Mounting bracket installation

7 Connect the end SCSI connector on the SCSI cable with five connectors to the CDI-4000 at J2, SCSI port; (see Figure 6-2).

WARNING **To prevent damage to the CDI-4000, pin 1 of the SCSI cable connector and pin 1 of the J2 of CDI-4000 *must* align.**

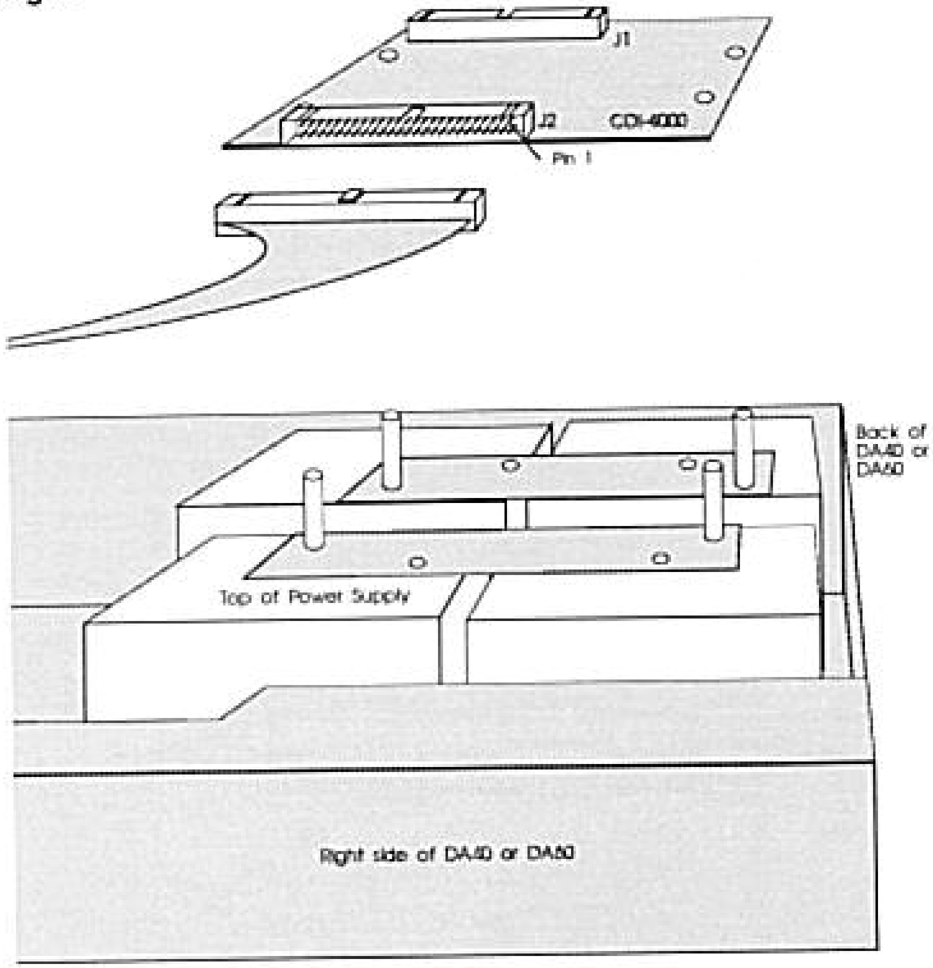


Figure 6-2: SCSI port (J2) cable connection

8 Connect other SCSI connectors to all SCSI devices in the DA40 or DA60. Align pin 1 of cable SCSI connector to pin 1 of SCSI connector on device correctly.

9 Terminate each end of the SCSI bus as explained in "Hardware Configuration" Chapter 3.

10 Put two plastic rivets into the CDI-4000 through the mylar. See Figure 6-3.

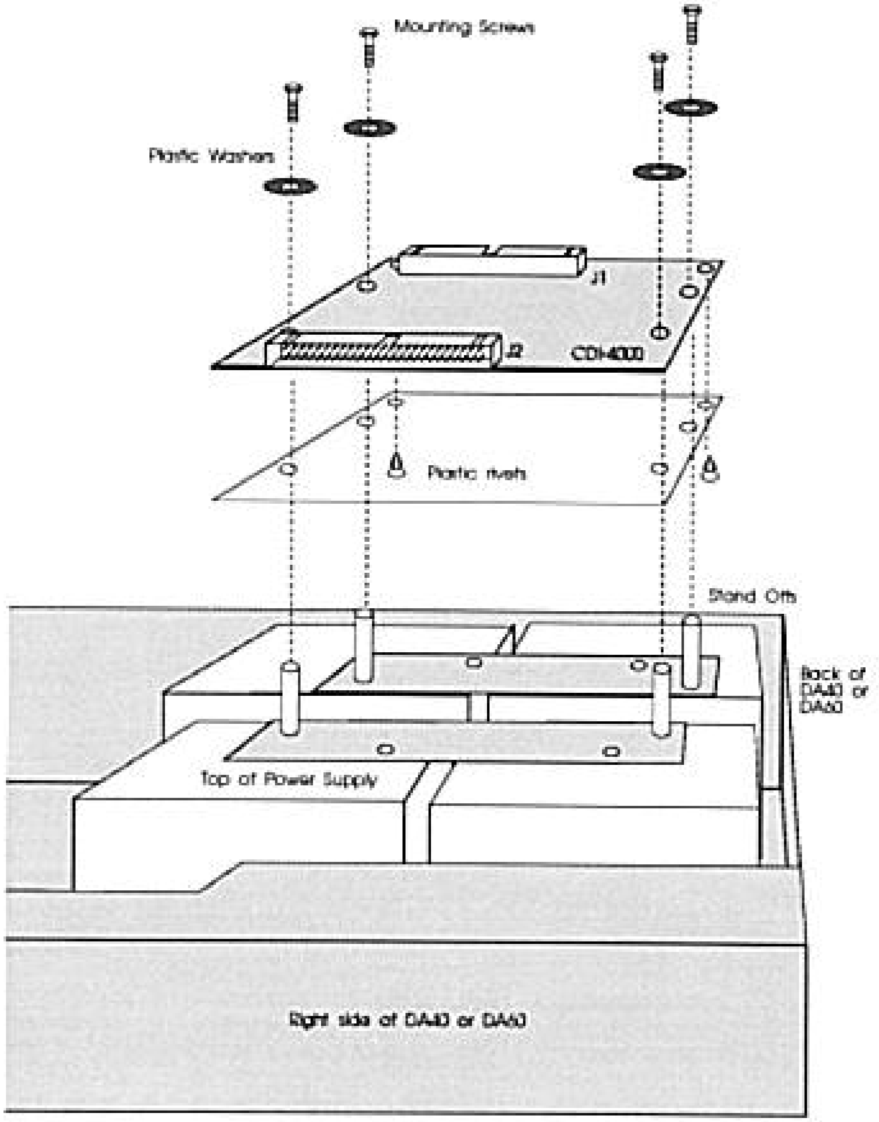


Figure 6-3: Mouting the CDI-4000 Into DA40

11 Place the CDI-4000 on the mounting brackets and put four screws through the holes in the CDI-4000 and into the standoffs on the mounting brackets. See Figure 6-3.

12 Remove the four screws from the bracket located on the back right of the DA40 or DA60. Remove the bracket.

13 Assemble the DSSI cable to DSSI bracket.

14 Mount the DSSI bracket into the back of the DA40 or DA60. DSSI cable must be inside the DA40 or DA60.

15 Put four screws into the DA40 or DA60 through the DSSI bracket as shown in Figure 6-4.

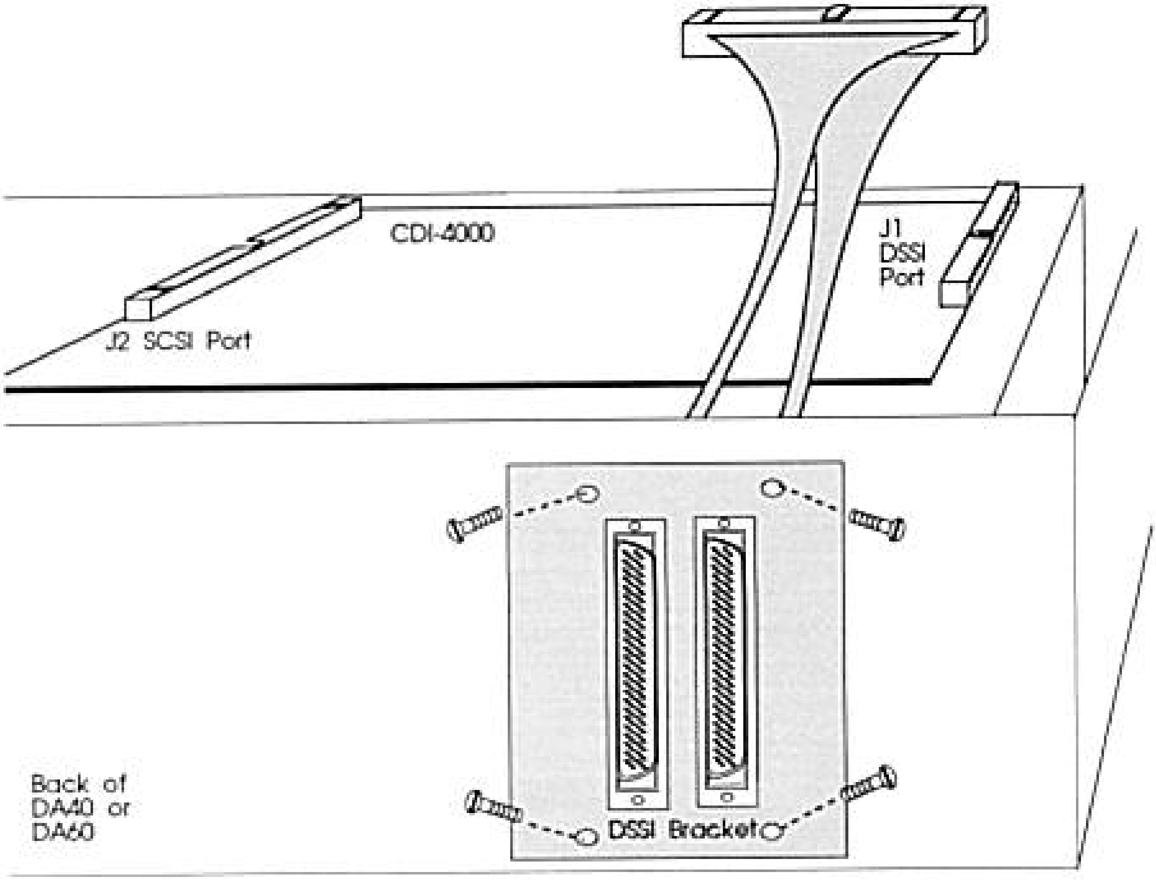


Figure 6-4: Installing the DSSI bracket

16 For termination on the CDI-4000 at the DSSI port—RN1, RN2, RN3, RN4. See "Hardware Configuration" Chapter 3.

17 Connect the DSSI cable from the DSSI bracket to the CDI-4000 at J1, DSSI port; see Figure 6-5. Route the DSSI cable on the side of the power supply.

WARNING **To prevent damage to the CDI-4000, pin 1 of the DSSI cable connector and pin 1 of J1 of CDI-4000 *must* align.**

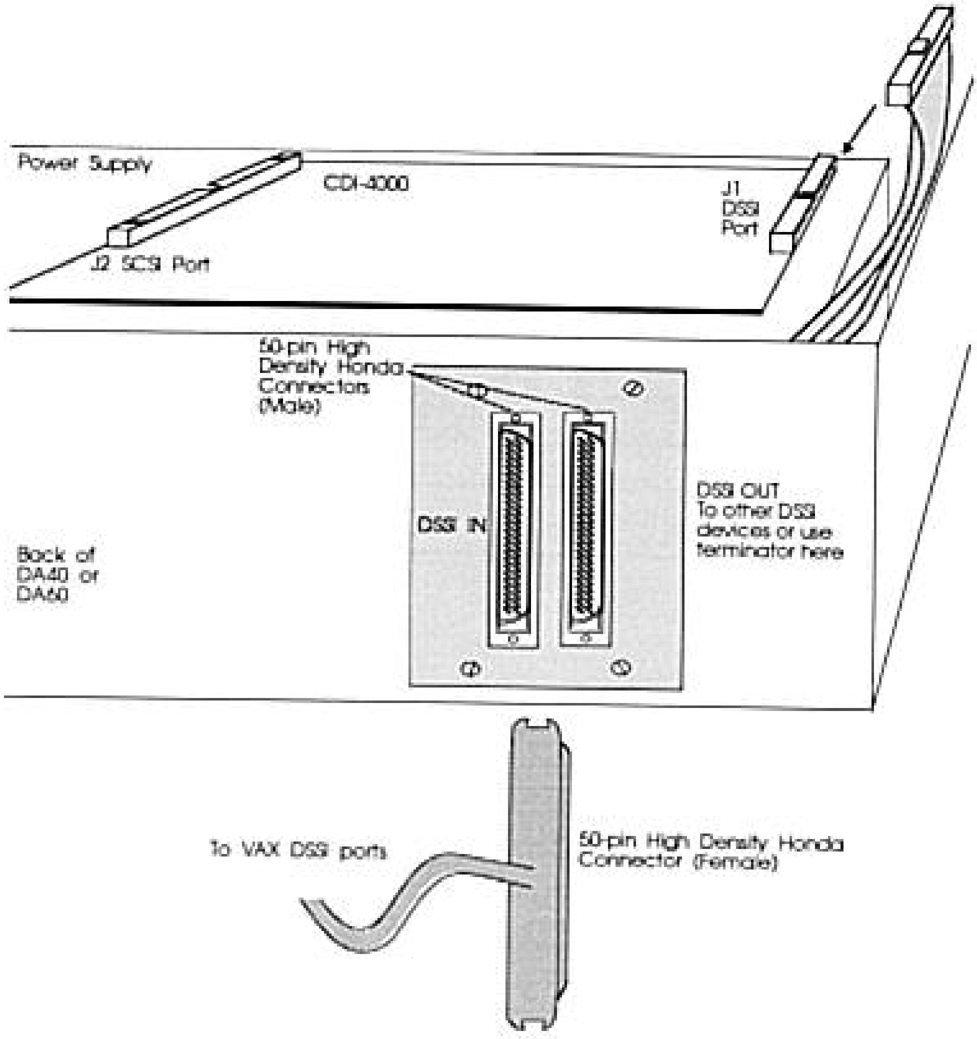

Power Supply
CDI-4000
J1 DSSI Port
J2 SCSI Port
50-pin High Density Honda Connectors (Male)
DSSI IN
DSSI OUT To other DSSI devices or use terminator here
Back of DA40 or DA60
To VAX DSSI ports
50-pin High Density Honda Connector (Female)

Figure 6-5: DSSI port (J1) cable connection

18 Connect an external DSSI cable to one of the DSSI connectors on the DSSI bracket as shown in Figure 6-5.

19 Connect an external DSSI terminator to the other DSSI connector on the DSSI bracket if this connector is not used.

20 Connect the other end of the external DSSI cable to the VAX DSSI port; see Figure 6-6.

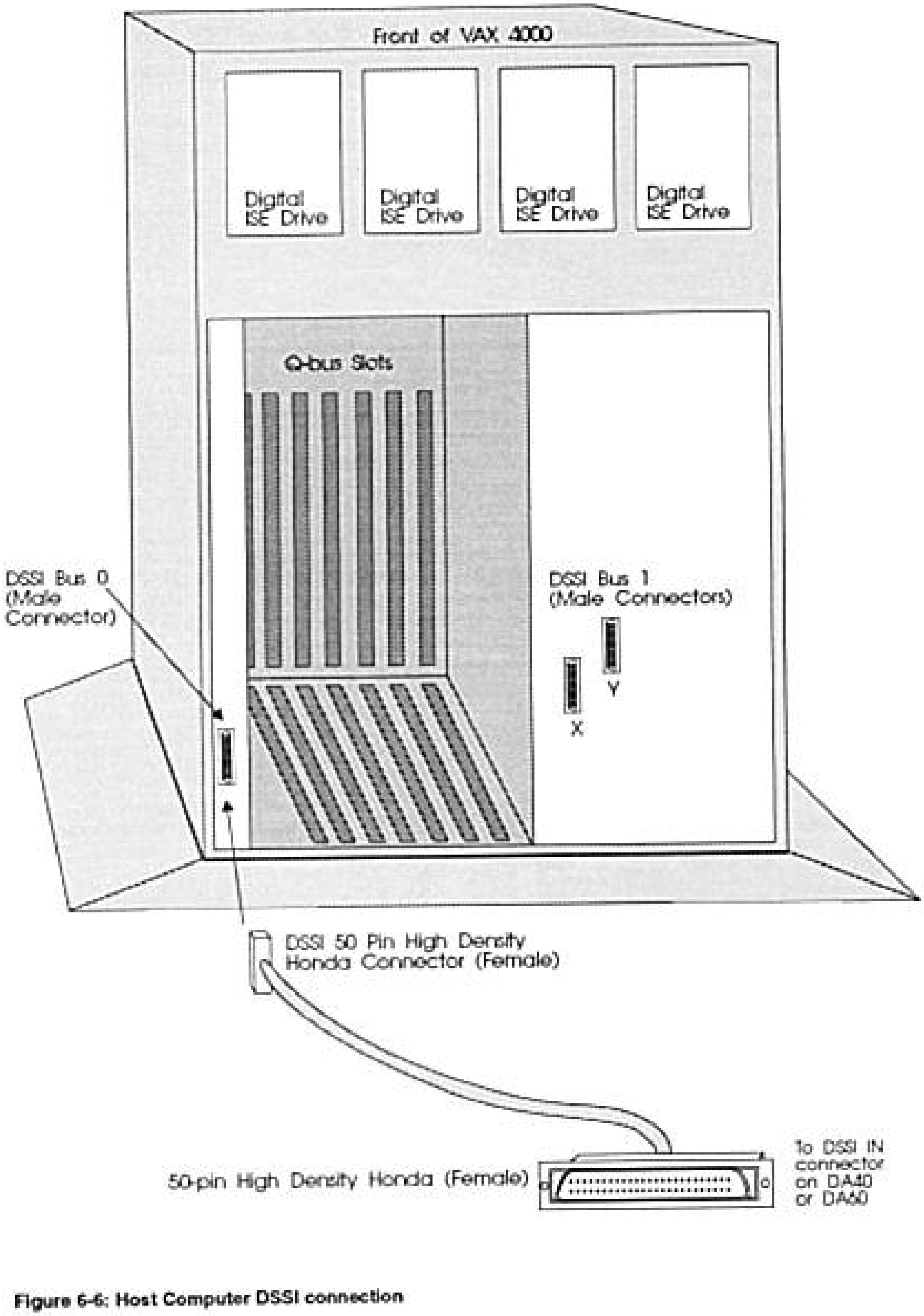

Front of VAX 4000
Digital ISE Drive
Digital ISE Drive
Digital ISE Drive
Digital ISE Drive
Q-bus Slots
DSSI Bus 0 (Male Connector)
DSSI Bus 1 (Male Connectors)
X
Y
DSSI 50 Pin High Density Honda Connector (Female)
50-pin High Density Honda (Female)
To DSSI IN connector on DA40 or DA60

Figure 6-6: Host Computer DSSI connection

21 Locate the three connector power cable.

- **a** Connect the female power connector to the shortest male power cable connector from the DA40 or DA60 power supply.
- **b** Connect one male power connector to the CDI-4000 at J3.
- **c** Connect the other male power connector to the first disk drive; see Figure 6-7.

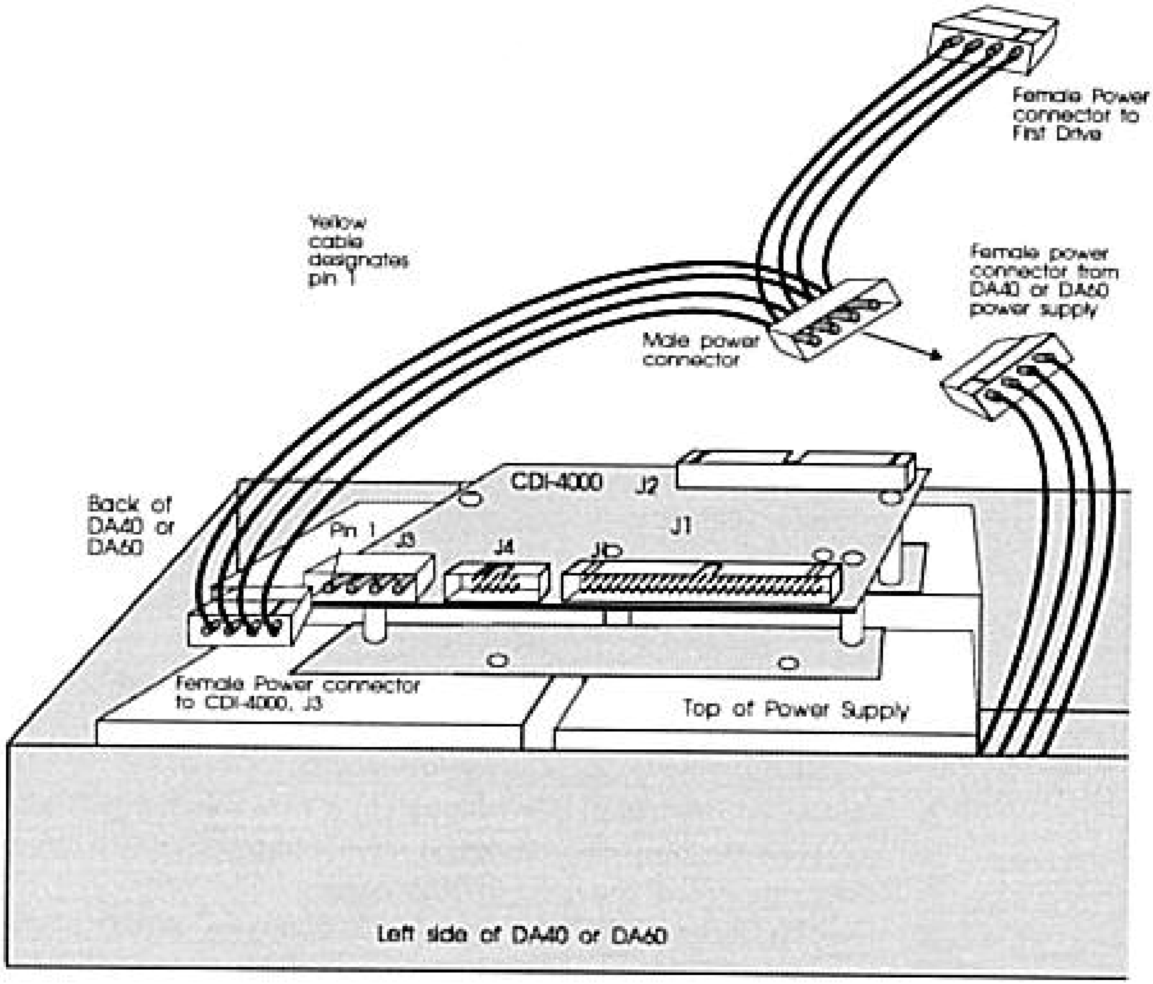

Female Power connector to First Drive
Yellow cable designates pin 1
Female power connector from DA40 or DA60 power supply
Male power connector
CDI-4000
J2
J1
Back of DA40 or DA60
Pin 1
J3
J4
J5
Female Power connector to CDI-4000, J3
Top of Power Supply
Left side of DA40 or DA60

Figure 6-7: Power connection

22 Connect other power cables from the power supply to each SCSI device in the DA40 and DA60 as explained in DA40 or DA60 documenation.

23 Loosen the four screws in the corners of the DA40 or DA60 front panel. Detach the front panel from the DA40 or DA60.

24 *Replace the power harness of the DA40 by following these instructions:*

a Disconnect the Mate-N-Lok connector of the AC power harness from the DA40 fan compartment. See Figure 6-8.

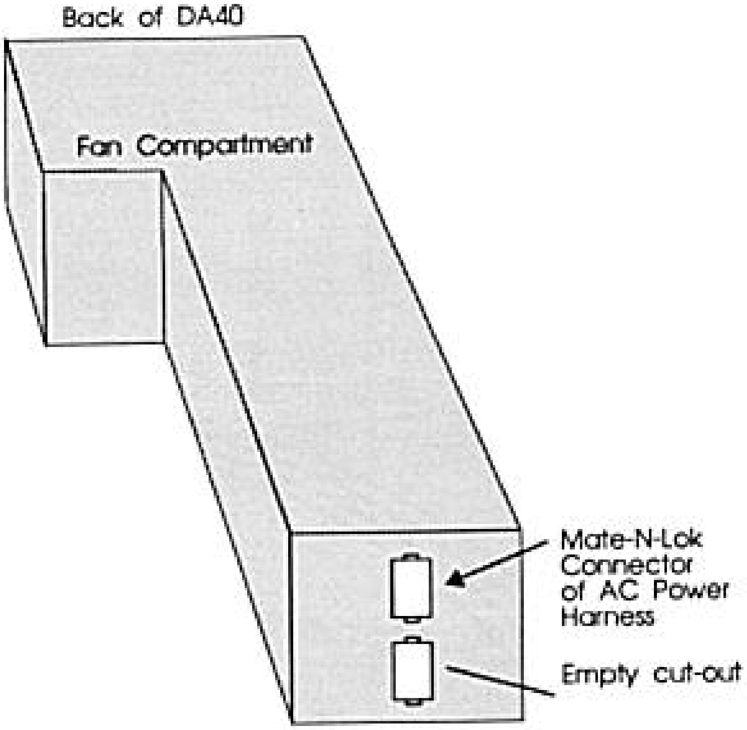


Figure 6-8: DA40 Fan Compartment with Mate-N-Lok

b Remove AC power harness from DA40 by pushing the power switch out of the front panel from the back side.

c Re-use and re-install the AC power harness into the LCD display panel by pushing the AC power switch into the switch cut-out from the front side of the LCD display panel.

d Reconnect the Mate-N-Lok connector of the AC power harness to the top Mate-N-Lok connector located on the DA40 fan compartment.

NOTE The power switch provided by CMD must be used as a spare part only.

Replace the power harness of the DA60 by following these instructions:

a Disconnect the Mate-N-Lok connectors of the AC power harness from the DA60 fan compartment; and disconnect the thermal sensor cable. See Figure 6-9.

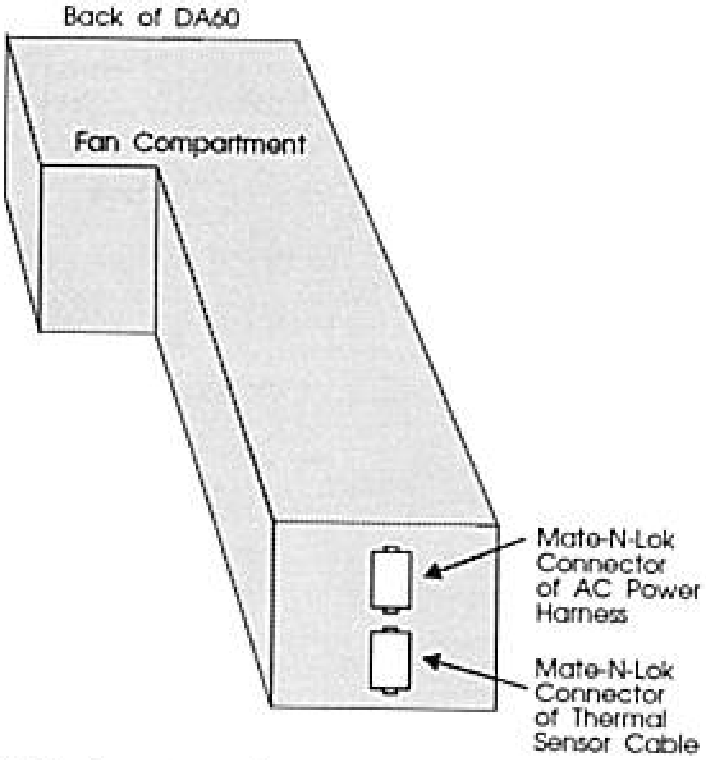

Back of DA60
Fan Compartment
Mate-N-Lok Connector of AC Power Harness
Mate-N-Lok Connector of Thermal Sensor Cable

Figure 6-9: DA60 Fan Compartment with Mate-N-Lok

b Remove AC power and thermal sensor harness from DA60 by pushing the power switch out of the front panel from the back side.

c Re-use and re-install the AC power and thermal sensor harness into the LCD display panel by pushing the AC power switch into the switch cut-out from the front side of the LCD display panel.

d Reconnect the Mate-N-Lok connector of the AC power harness to the top Mate-N-Lok connector located on the DA60 fan compartment.

e Connect the Mate-N-Lok connector fo the thermal sensor cable supplied by CMD to the bottom Mate-N-Lok connector on the fan compartment. Connect any one of the 2-pin socket connector to J12 and the other one to J13 of LCD Display panel

f The existing thermal sensor cable from DA60 is left unused. Use tie wrap to secure unused wires and connectors.

NOTE The power switch provided by CMD must be used as a spare part only.

25 Place the LCD into the DA40 or DA60 with wiring facing the drives.

26 Tighten the four screws in the four corners of the LCD module to connect it to the DA40 or DA60.

27 Locate the two 14-pin cables connected by tape.
- **a** Connect one cable from J5 of LCD to J5 on the CDI-4000.
- **b** Connect one cable from J6 of LCD to J6 on the CDI-4000.
- **c** Route the cables J5 and J6 on the side of the drives clearing the fan by using cable clamp. See Figure 6-10.

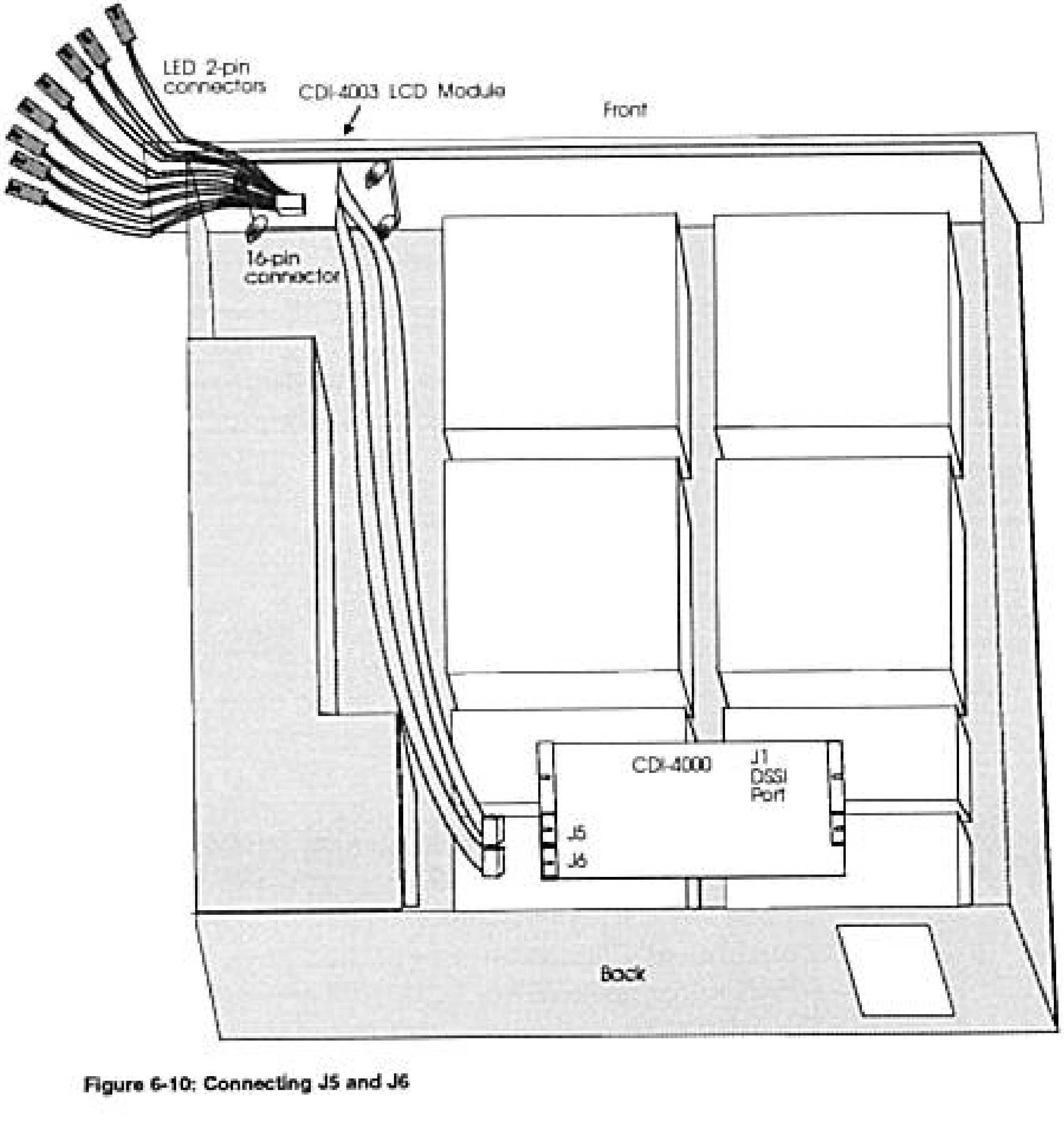


Figure 6-10: Connecting J5 and J6

28 Locate the eight 2-pin socket connector cable. Connect the 16-pin socket connector to the header on the CDI-4003 (back of LCD) J8. Align brown wire of cable to position "0" of J8.

29 Connect each 2-pin socket connector to each LED on the drive as listed in Table 6-1. See documentation for disk drive for LED connections. For example, connect the first Brown and Red wire for LED 0 to the SCSI drive with SCSI ID 0.

Table 6-1 LCD LED's and Drive SCSI IDs

LCD LED	LCD LED Color Combo.	Drive SCSI ID
LED 0	Brown & Red	SCSI ID 0
LED 1	Orange & Yellow	SCSI ID 1
LED 2	Green & Blue	SCSI ID 2
LED 3	Purple & Grey	SCSI ID 3
LED 4	Brown & Red	SCSI ID 4
LED 5	Orange & Yellow	SCSI ID 5
LED 6	Green & Blue	SCSI ID 6
LED 7	Purple & Grey	SCSI ID 7—Reserved for CDI-4000

WARNING **Observe the polarity of the socket connector; align the "+" side of the 2-pin socket connector to the "+" side of LED.**

a If the LED on the drive is a pin header, simply connect the 2-pin socket connector into the pin header.

b If the LED connector on the drive is a socket connector, insert the pin header (included the LCD kit) into the 2-pin socket connector; then connect it to the LED socket connector on the drive. (There are two types of pin headers, one is straight the other is bent at a 90° angle; use the one that works best with the drive.)

c If the LED is soldered on the drive, desolder and remove the LED off and solder the pin header sent with the LCD kit (there are two types of pin headers, one is straight the other is bent at a 90° angle; use the one that works best with the drive); or consult drive documentation.

d Connect the #7 LED wire to J7 labeled "CDI LED" of the LCD module.

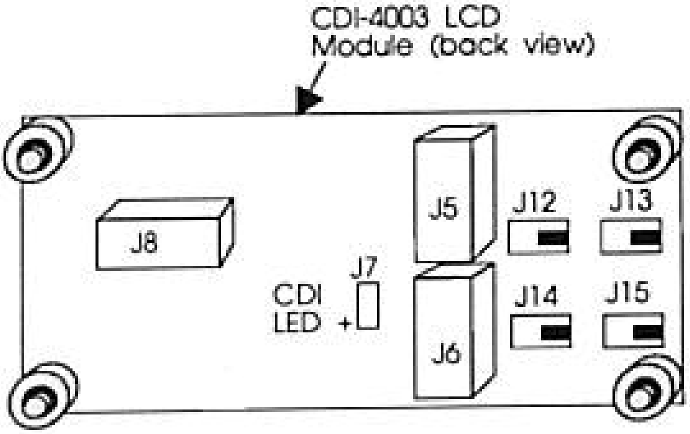


Figure 6-11: LCD module (back view)

30 Close the DA40 or DA60, re-install front cover, and mount it into the rackmount chassis as explained in the DA40 or DA60 documentation.

31 Re-connect the AC power cord to the DA40 or DA60.

7

CDI-4000-SD Installation

CDI-4000-SD Installation involves installing the CDI-4000-SDA, CDI-4000-SDB or CDI-4000-SDC half-height LCD assemblies and disk drives into an external chassis like a shoebox, TRIMM TWR-540-231 tower, or the TRIMM DA40 or DA60.

The CDI-4000-SDA interfaces with one drive and the CDI-4000-SDB interfaces with two drives; these usually work within the shoebox. CDI-4000-SDC interfaces with seven drives and works within the subsystem tower or TRIMM DA40 or DA60.

For installing SCSI devices, terminating each end of the DSSI and SCSI buses, and identifying each port see Chapter 3, sections, "Determining DSSI Node" and "Hardware Configuration."

NOTE For some subassemblies, the CDI-4000-SD half-height LCD assembly will leave a gap in the front panel, if your OEM does not provide a filler panel for this gap contact CMD for a filler panel.

Installing CDI-4000-SDA or CDI-4000-SDB into Shoebox

If you have the CDI-4000-SDA or CDI-4000-SDB half-height LCD assembly, install the half-height LCD assembly into the shoebox by following these instructions.

1. Make sure the shoebox is powered **OFF**. Unplug the power cord from the shoebox chassis.
2. Open the shoebox as shown in shoebox documentation.

WARNING **Be sure to wear anti-static wrist straps or equivalent to protect the drive and the CDI-4000 from electrostatic damage.**

3. Install the drives into the shoebox as explained by shoebox documentation.
4. Mount the half-height LCD assembly into the shoebox and put four screws into the half-height LCD assembly through the shoebox; see Figure 7-1.

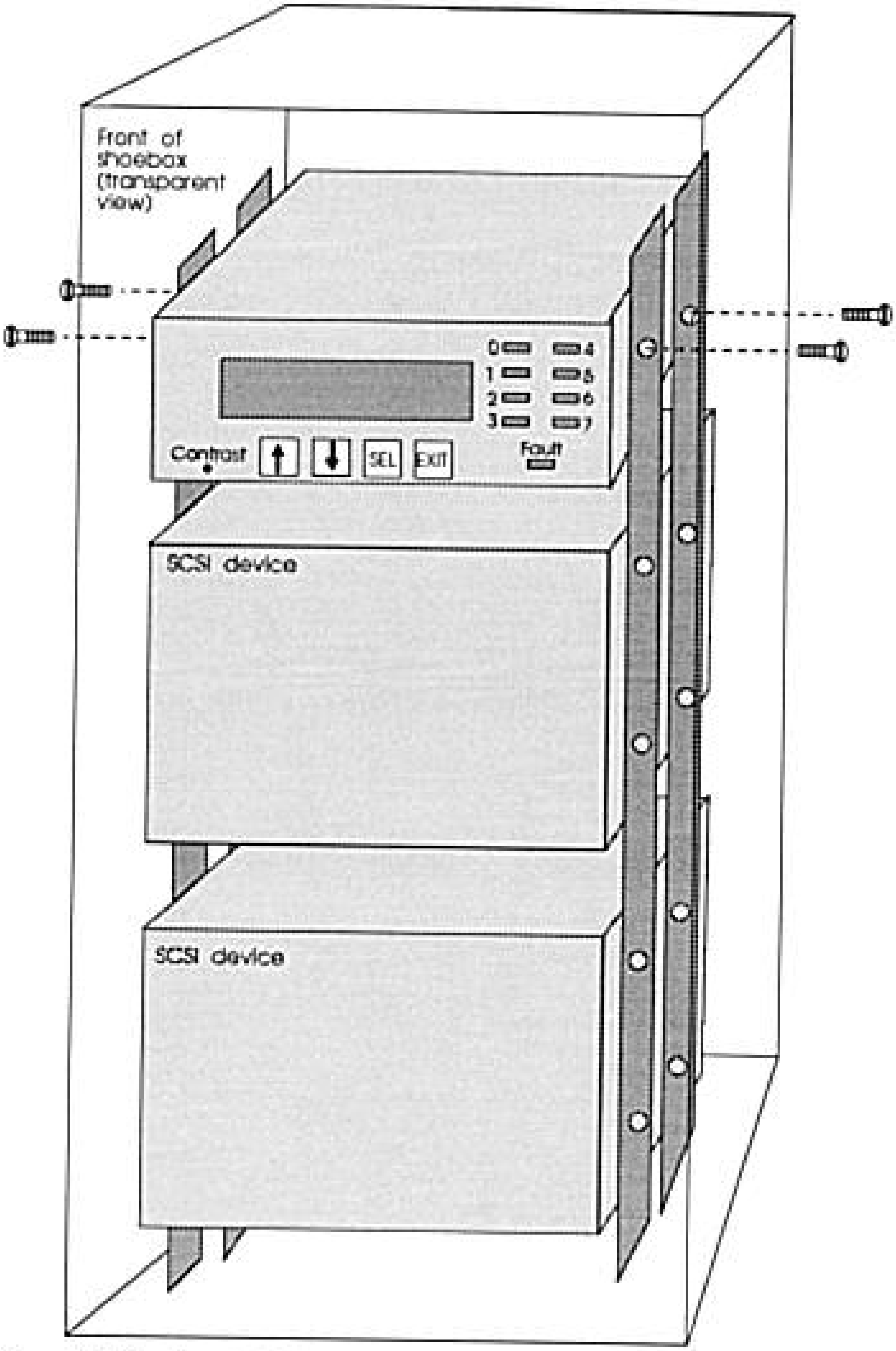


Figure 7-1: Mounting the CDI-4000

6 Remove the screws from the back panel cover plate(s) located on the back of the shoebox. Remove the back panel cover plate(s).

7 Mount the DSSI bracket or high-density Honda cut-outs to the back of the shoebox. Internal DSSI cable must be inside the shoebox.

8 Put mounting screws into the shoebox through the DSSI bracket(s) and secure them with the nuts with lock washers. For high-density Honda cut-outs, see Figure 7-2. For a DSSI bracket example, see Figure 7-10.

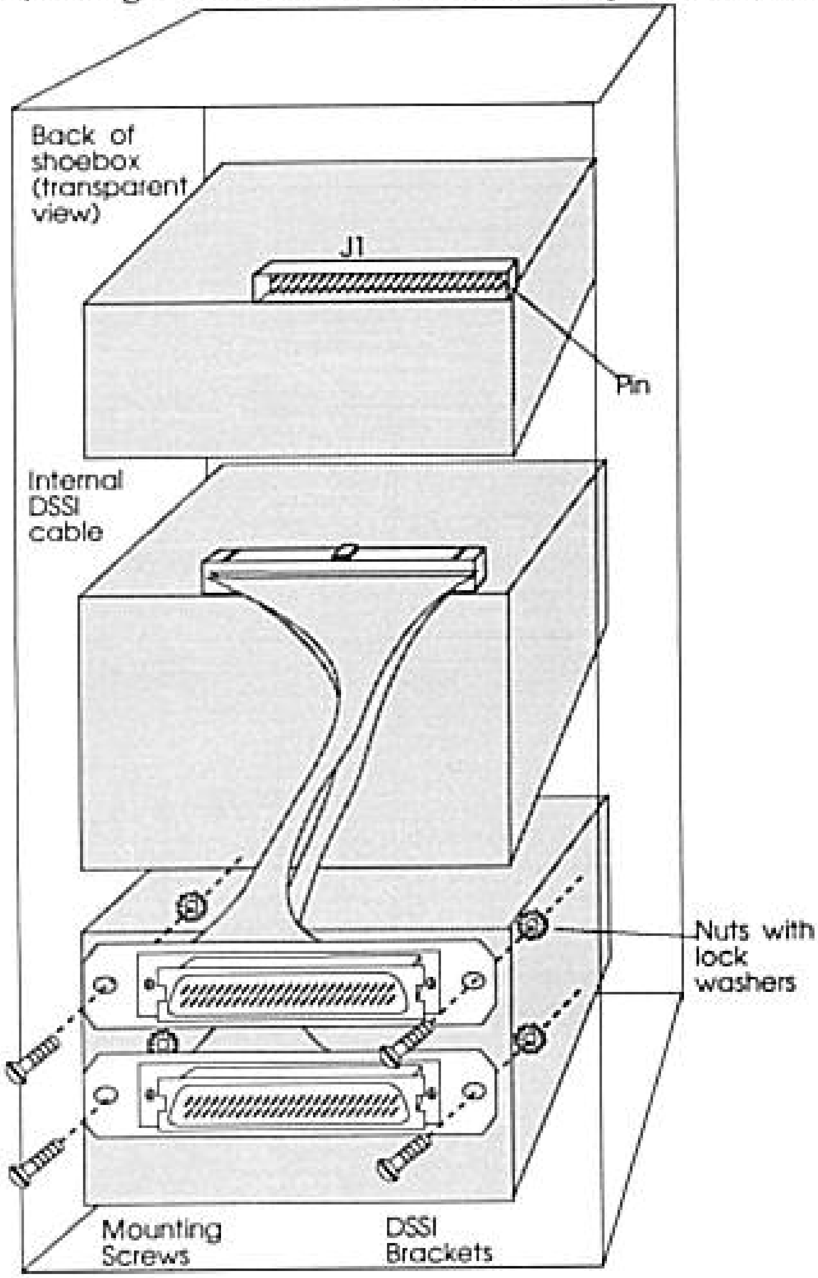


Figure 7-2: Installing the DSSI bracket

9 Connect the internal DSSI cable from the DSSI bracket to the CDI-4000 at J1, DSSI port; see Figure 7-2.

WARNING **To prevent damage to the CDI-4000, pin 1 of the DSSI cable connector and pin 1 of J1 of CDI-4000 *must* align.**

10 Connect an external DSSI cable to one of the DSSI connectors on the DSSI bracket as shown in Figure 7-3.

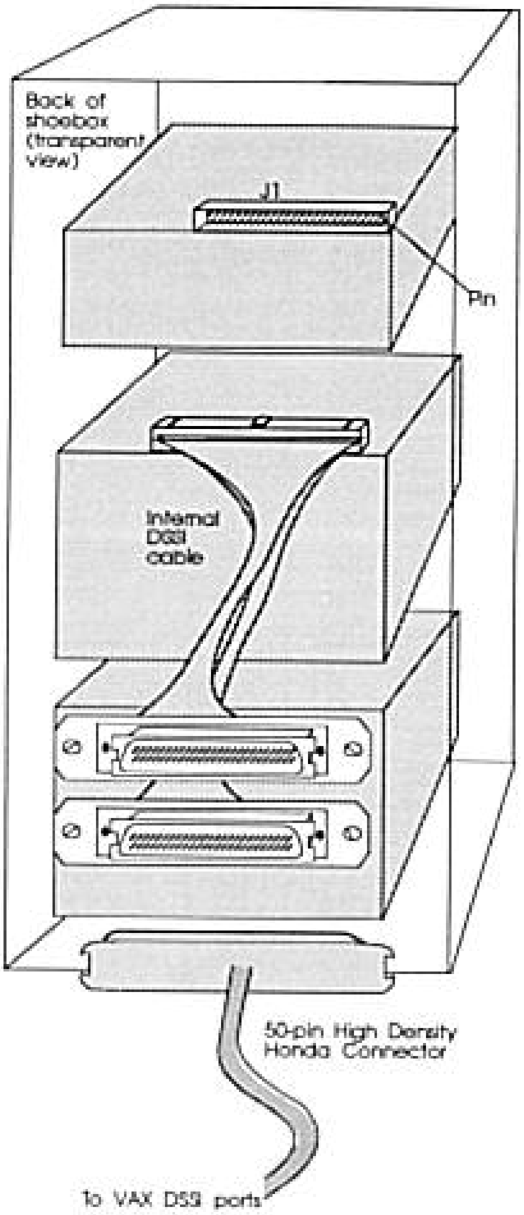

Back of shoebox (transparent view)
J1
Pin
Internal DSSI cable
50-pin High Density Honda Connector
To VAX DSSI ports

Figure 7-3: DSSI ports for shoebox

11 Connect the other end of the external DSSI cable to the VAX DSSI port; see Figure 7-4.

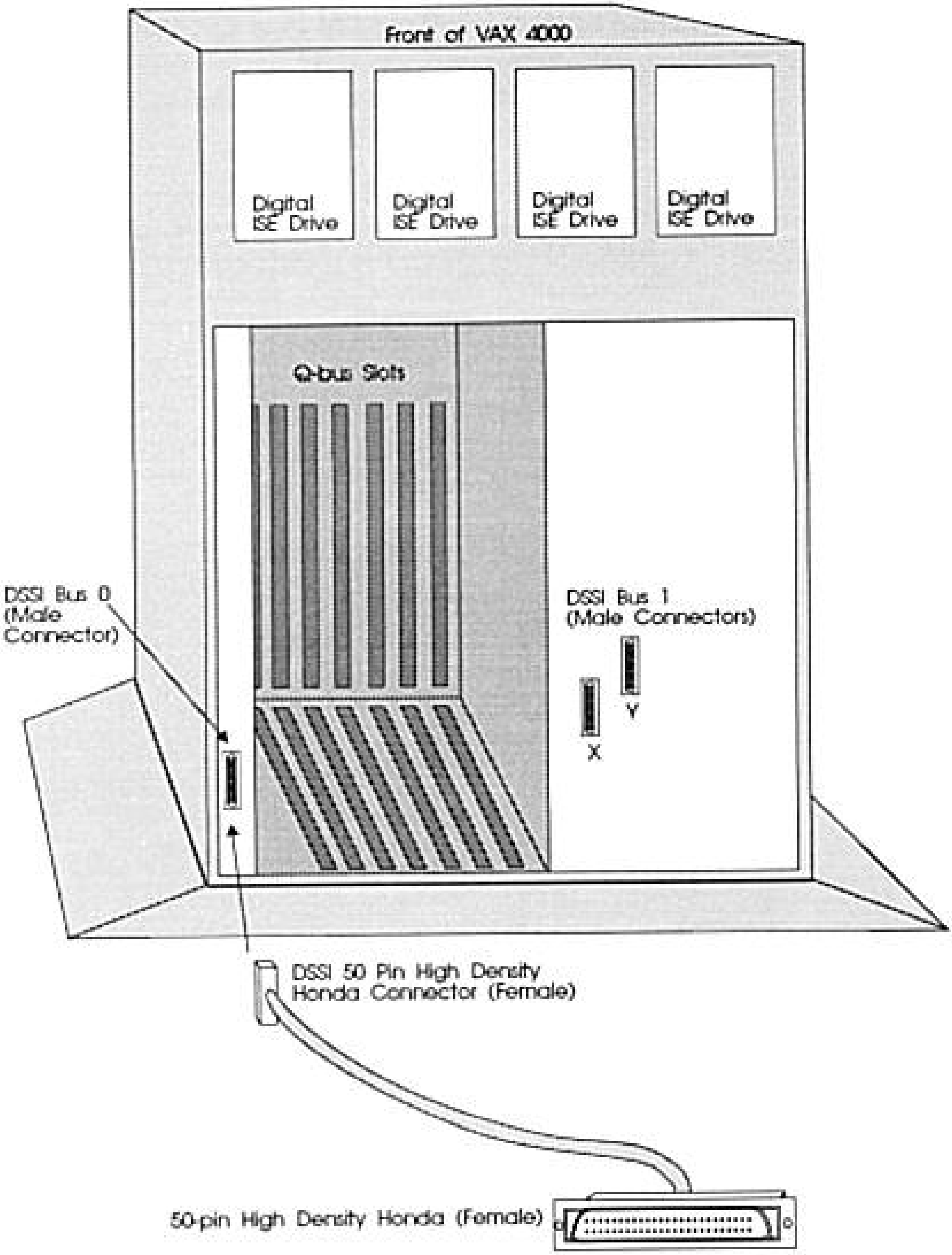

Front of VAX 4000
Digital ISE Drive
Digital ISE Drive
Digital ISE Drive
Digital ISE Drive
Q-bus Slots
DSSI Bus 0 (Male Connector)
DSSI Bus 1 (Male Connectors)
Y
X
DSSI 50 Pin High Density Honda Connector (Female)
50-pin High Density Honda (Female)

Figure 7-4: Host Computer DSSI connection

12 Terminate each end of the DSSI bus by using external DSSI terminators or on-board terminators; see "Hardware Configuration," Chapter 3.

13 Connect the male connector (with the ejector latch of the internal SCSI cable, coming from J2 on the CDI-4000) to the SCSI cable going to the SCSI drives. (If OEM does not supply SCSI cable contact CMD.) See Figure 7-5.

WARNING **To prevent damage to the CDI-4000, pin 1 of the SCSI cable connector and pin 1 of the J2 of CDI-4000 *must* align.**

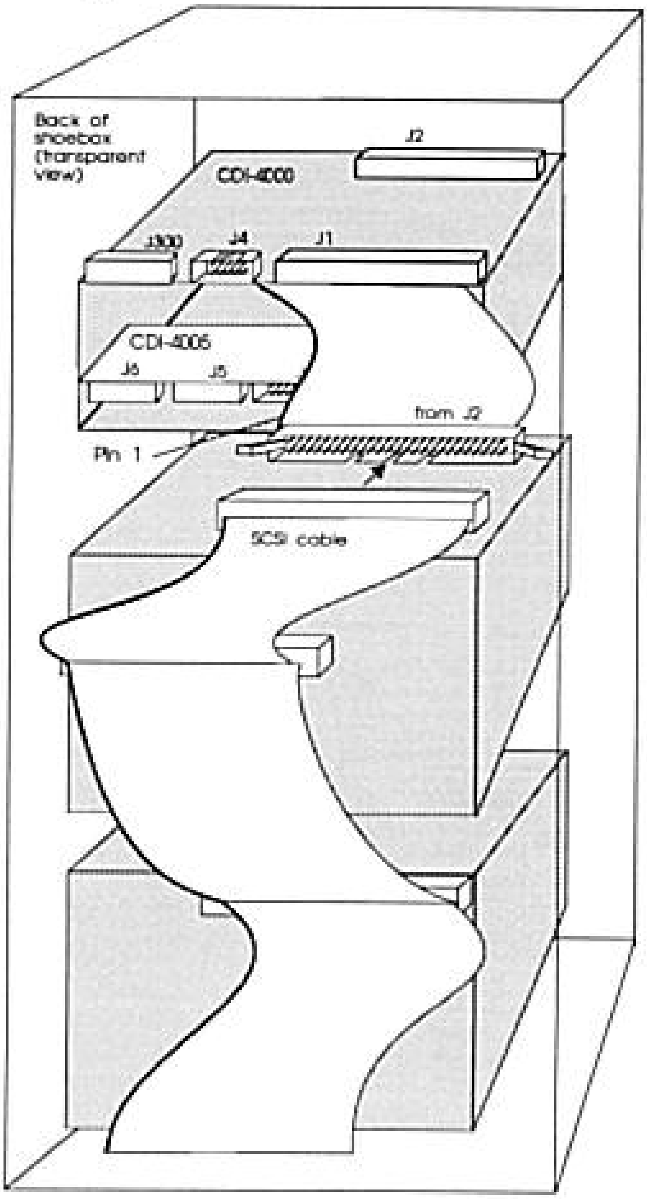


Figure 7-5: SCSI port (J2) cable connection

Or remove the CDI-4000 from the half-height LCD assembly and then directly connect the SCSI cable to J2 (see section "Installing CDI-4000 onto Half-Height LCD Holding Bracket").

14 Terminate each end of the SCSI bus as explained in "Hardware Configuration" Chapter 3.

15 Locate the disk drives' power cable from the shoebox.

a Connect one power connector to the CDI-4000 at J3; see Figure 7-6.

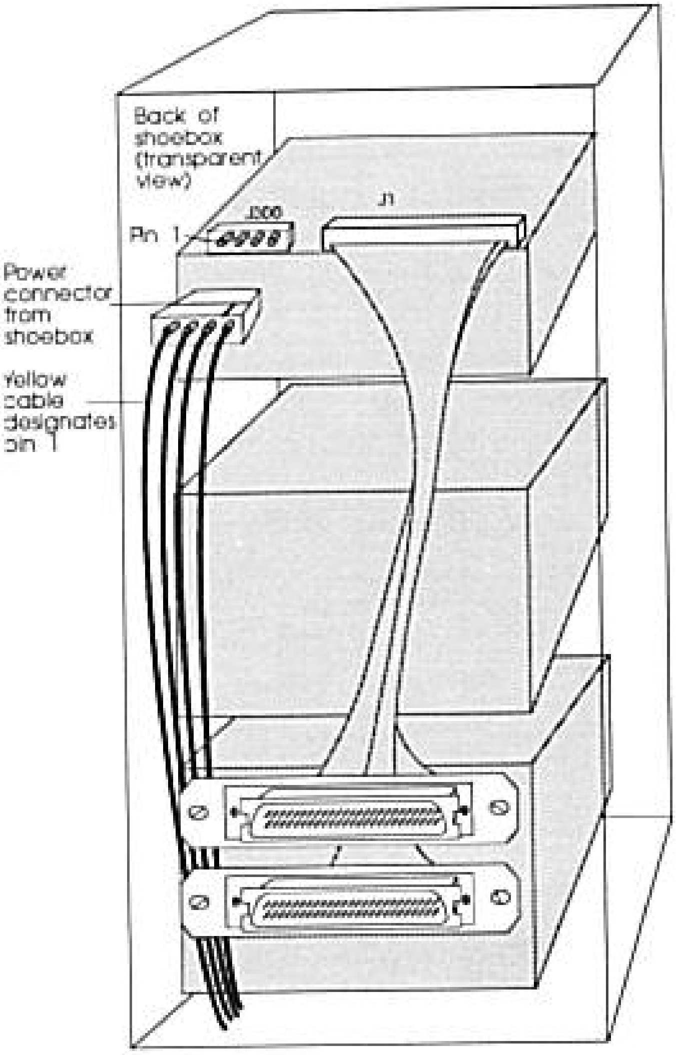

Back of shoebox (transparent view)
J300
J1
Pin 1
Power connector from shoebox
Yellow cable designates pin 1

Figure 7-6: Power connection

b Connect other power cables from the power supply to each SCSI device in the shoebox as explained in shoebox documenation.

16. Locate the rainbow cable with eight 2-pin socket connectors. Connect the 16-pin socket connector to J8 on the back of the CDI-4005. Align brown wire of cable to position "0" of J8, labeled "Device LED." See Figure 7-7.

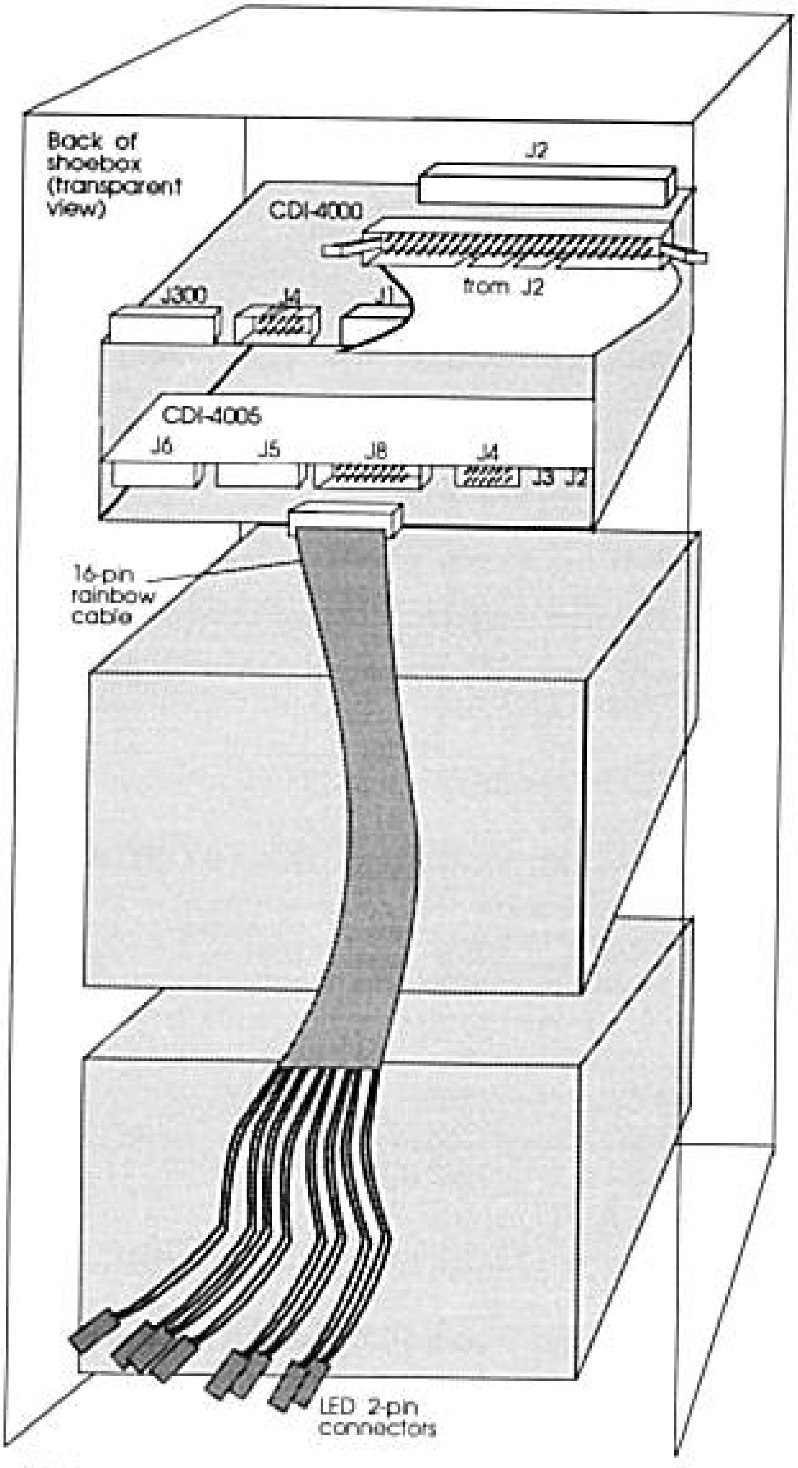


Figure 7-7: Connecting rainbow cable to J8

17 Connect each 2-pin socket connector to each LED on the drive as listed in Table 7-1; separate the 2-pin cables if necessary. See documentation for disk drive for LED connections. For example, connect the first Brown and Red wire for LED 0 to the SCSI drive with SCSI ID 0.

Table 7-1 LCD LEDs and Drive SCSI IDs

LCD LED	LCD LED Color Combo.	Drive SCSI ID
LED 0	Brown & Red	SCSI ID 0
LED 1	Orange & Yellow	SCSI ID 1
LED 2	Green & Blue	SCSI ID 2
LED 3	Purple & Grey	SCSI ID 3
LED 4	Brown & Red	SCSI ID 4
LED 5	Orange & Yellow	SCSI ID 5
LED 6	Green & Blue	SCSI ID 6
LED 7	Purple & Grey	SCSI ID 7—Reserved for CDI-4000

WARNING Observe the polarity of the socket connector; align the "+" side of the 2-pin socket connector to the "+" side of LED.

- **a** If the LED on the drive is a pin header, simply connect the 2-pin socket connector into the pin header.
- **b** If the LED connector on the drive is a socket connector, insert the pin header (included the LCD kit) into the 2-pin socket connector; then connect it to the LED socket connector on the drive. (There are two types of pin headers, one is straight the other is bent at a 90° angle; use the one that works best with the drive.)
- **c** If the LED is soldered on the drive, desolder and remove the LED off and solder the pin header sent with the LCD kit (there are two types of pin headers, one is straight the other is bent at a 90° angle; use the one that works best with the drive); or consult drive documentation.
- **d** Connect the #7 LED wire to J7 of the CDI-4005.

18 Close the shoebox as explained in the shoebox documentation.

19 Re-connect the AC power cord to the shoebox.

Installing CDI-4000-SDC into TRIMM TWR-540-231 Tower

If you have the CDI-4000-SDC and a TRIMM TWR-540-231 tower, install the half-height LCD assembly into the tower, by following these instructions. Other tower subsystems installation instructions will vary.

1 Make sure the tower is powered **OFF**. Unplug the power cord from the tower chassis.

2 Open the tower as shown in tower documentation.

WARNING **Be sure to wear anti-static wrist straps or equivalent to protect the drive and the CDI-4000 from electrostatic damage.**

3 Install all drives into the tower as explained by tower documentation.

4 Mount the half-height LCD assembly onto the tower tray. The mounting holes closer to the front make the half-height LCD assembly flush to the front of the chassis; see Figure 7-8.

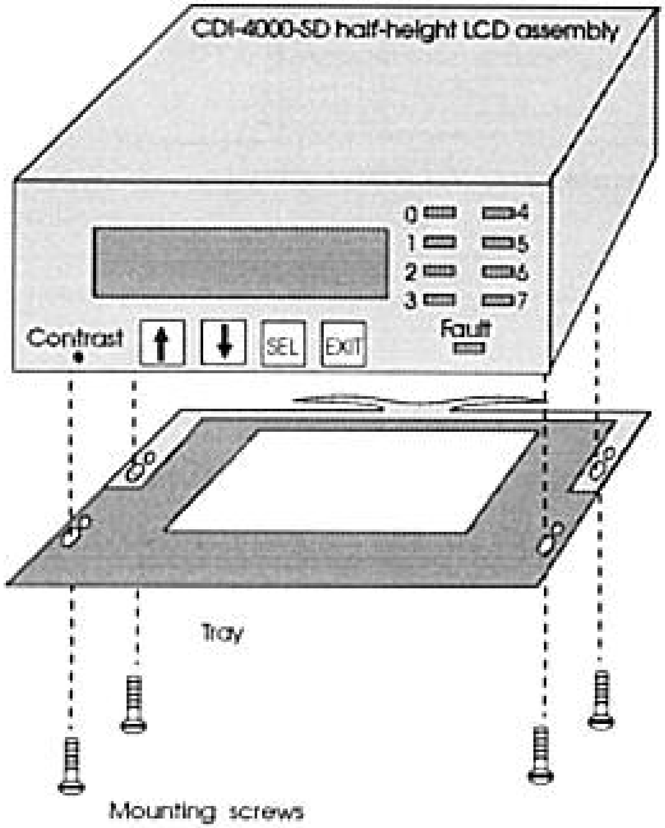


Figure 7-8: Mounting the CDI-4000

5 Slide the tray into the top front slot of the tower. See Figure 7-9.

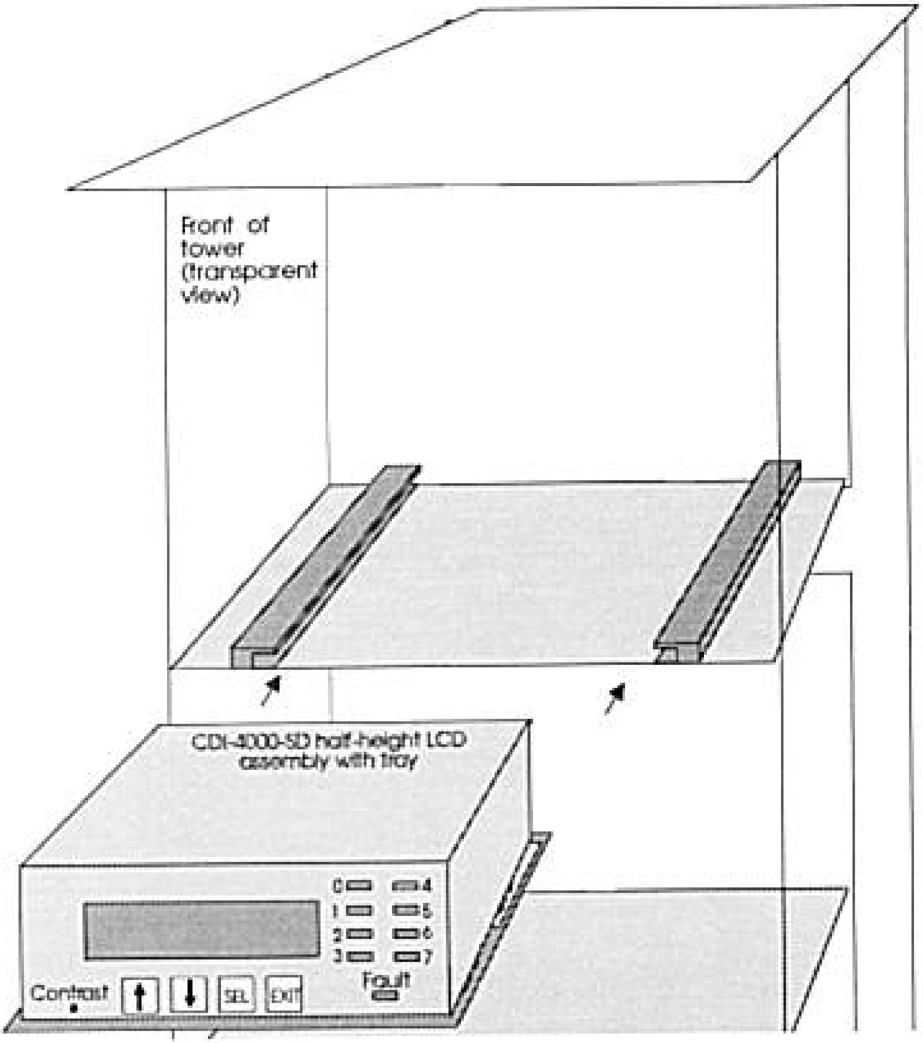


Figure 7-9: Slide the tray into the tower

6 Remove the four screws from the bracket located on the back of the tower. Remove the bracket.

7 Mount the DSSI bracket into the back of the tower. Internal DSSI cable must be inside the tower.

8 Put four mounting screws into the tower chassis through the DSSI bracket and secure them with the nuts with lock washers as shown in Figure 7-10.

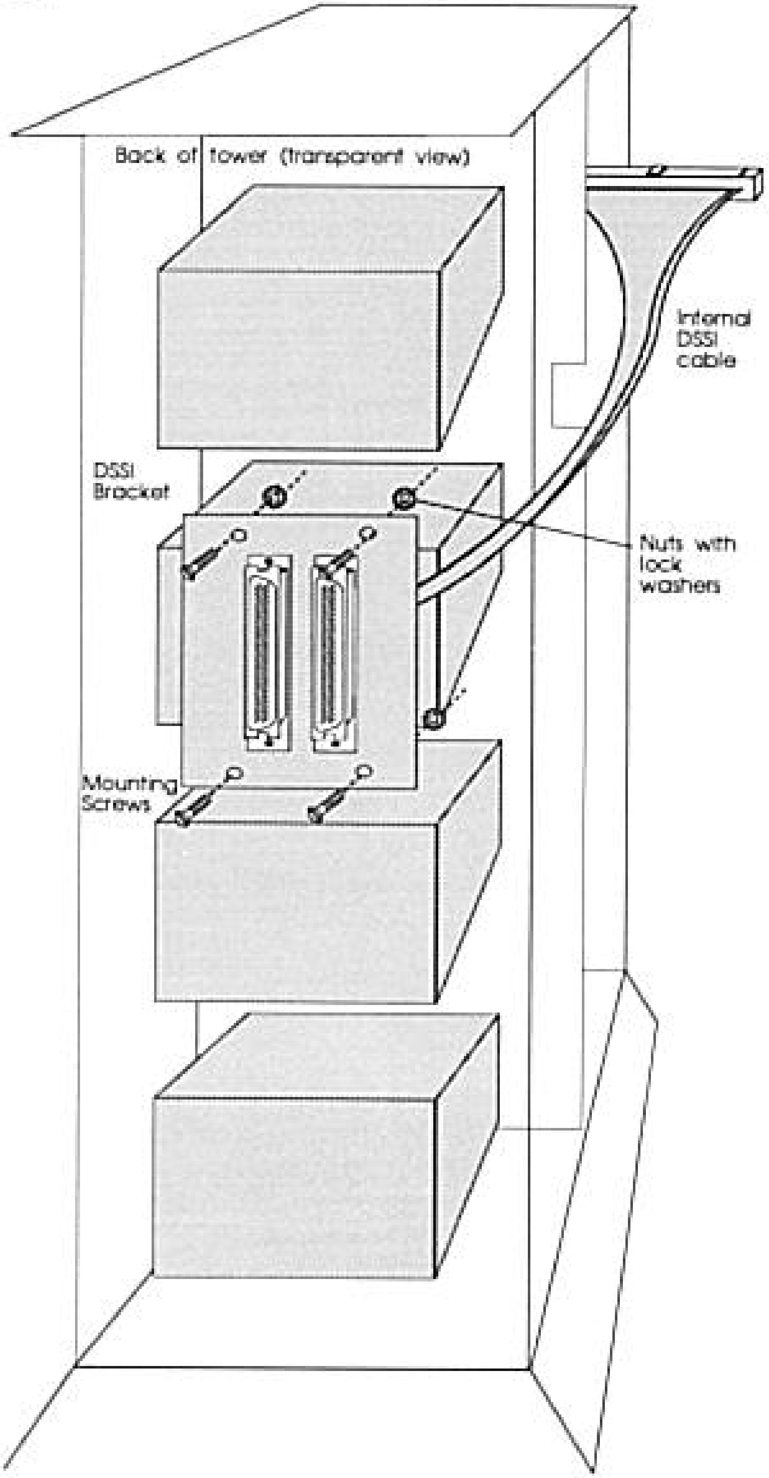


Figure 7-10: Installing the DSSI bracket

9 Connect the internal DSSI cable from the DSSI bracket to the CDI-4000 at J1, DSSI port; see Figure 7-10. Route the internal DSSI cable on the side of the SCSI drives and through the notch in the tower chassis.

WARNING **To prevent damage to the CDI-4000, pin 1 of the DSSI cable connector and pin 1 of J1 of CDI-4000 *must* align.**

10 Connect an external DSSI cable to one of the DSSI connectors on the DSSI bracket as shown in Figure 7-11.

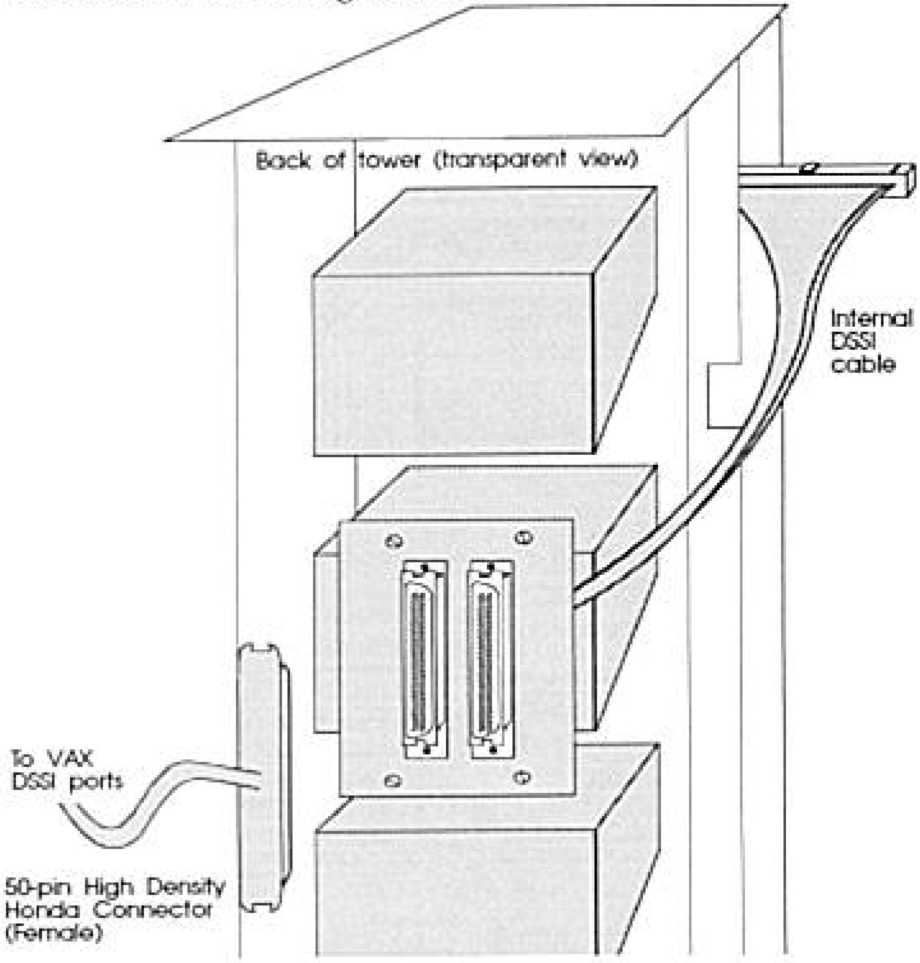

Back of tower (transparent view)
Internal DSSI cable
To VAX DSSI ports
50-pin High Density Honda Connector (Female)

Figure 7-11: DSSI port for tower

11 Connect the other end of the external DSSI cable to the VAX DSSI port; see Figure 7-4.

12 Terminate each end of the DSSI bus by using external DSSI terminators or on-board terminators; see "Hardware Configuration," Chapter 3.

13 Connect the male connector (with the ejector latch of the internal SCSI cable, coming from J2 on the CDI-4000) to the SCSI cable going SCSI drives. If OEM does not supply SCSI cable contact CMD. See Figure 7-5 for reference.

WARNING **To prevent damage to the CDI-4000, pin 1 of the SCSI cable connector and pin 1 of the J2 of CDI-4000 *must* align.**

Or remove the CDI-4000 from the half-height LCD assembly and then directly connect the SCSI cable to J2 (see section "Installing CDI-4000 onto Half-Height LCD Holding Bracket").

14 Terminate each end of the SCSI bus as explained in "Hardware Configuration" Chapter 3.

15 Locate the disk drives' power cable from the tower.
  a Connect one power connector to the CDI-4000 at J3; see Figure 7-6 for reference.
  b Connect other power cables from the power supply to each SCSI device in the tower as explained in tower documenation.

16 Locate the rainbow cable with eight 2-pin socket connectors. Connect the 16-pin socket connector to J8 on the back of the CDI-4005. Align brown wire of cable to position "0" of J8, labeled "Device LED." See Figure 7-7 for reference.

17 Connect each 2-pin socket connector to each LED on the drive as listed in Table 7-2. See documentation for disk drive for LED connections. For example, connect the first Brown and Red wire for LED 0 to the SCSI drive with SCSI ID 0.

NOTE If the rainbow cable is not long enough, contact CMD for an extention cable. Connect the female end of the extention cable to J8 and the male latch/ ejector end to the 16-pin connector on the rainbow cable.

Table 7-2 LCD LEDs and Drive SCSI IDs

LCD LED	LCD LED Color Combo.	Drive SCSI ID
LED 0	Brown & Red	SCSI ID 0
LED 1	Orange & Yellow	SCSI ID 1
LED 2	Green & Blue	SCSI ID 2
LED 3	Purple & Grey	SCSI ID 3
LED 4	Brown & Red	SCSI ID 4
LED 5	Orange & Yellow	SCSI ID 5
LED 6	Green & Blue	SCSI ID 6
LED 7	Purple & Grey	SCSI ID 7—Reserved for CDI-4000

WARNING **Observe the polarity of the socket connector; align the "+" side of the 2-pin socket connector to the "+" side of LED.**

a If the LED on the drive is a pin header, simply connect the 2-pin socket connector into the pin header.

b If the LED connector on the drive is a socket connector, insert the pin header (included the LCD kit) into the 2-pin socket connector; then connect it to the LED socket connector on the drive. (There are two types of pin headers, one is straight the other is bent at a 90° angle; use the one that works best with the drive.)

c If the LED is soldered on the drive, desolder and remove the LED off and solder the pin header sent with the LCD kit (there are two types of pin headers, one is straight the other is bent at a 90° angle; use the one that works best with the drive); or consult drive documentation.

d Connect the #7 LED wire to J7 of the CDI-4005.

18 Close the tower as explained in the tower documentation.

19 Re-connect the AC power cord to the tower.

Installing CDI-4000-SDC into TRIMM DA40 or DA60

If you have the CDI-4000-SDC, install the half-height LCD assembly into the TRIMM® DA40 or DA60 by following these instructions.

1. Make sure the DA40 or DA60 is powered **OFF**. Unplug the power cord from the DA40 or DA60 chassis.
2. Open the DA40 or DA60 as shown in DA40 or DA60 documentation.

WARNING **Be sure to wear anti-static wrist straps or equivalent to protect the drive and the CDI-4000 from electrostatic damage.**

3. Install all drives into the DA40 or DA60 as explained by DA40 or DA60 documentation.
4. Mount the half-height LCD assembly on the DA40 or DA60 tray. The mounting holes closer to the front make the half-height LCD assembly flush to the front of the chassis; see Figure 7-8.

5 Slide the tray into the DA40 or DA60. It is best to slide the tray into the left slot when facing the front; see Figure 7-12.

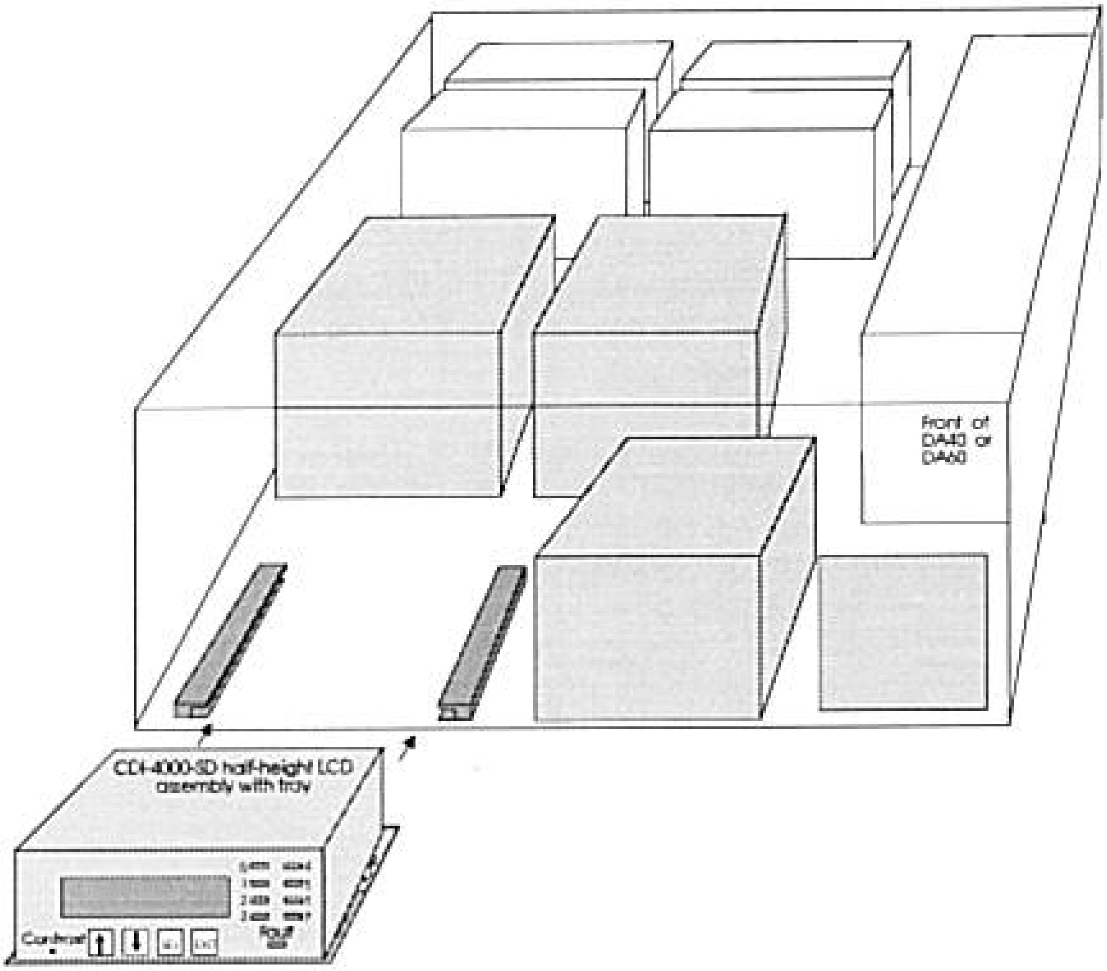


Figure 7-12: Sliding the tray into the DA40 or DA60

6 Remove the four screws from the bracket located on the back right of the DA40 or DA60. Remove the bracket.

7 Mount the DSSI bracket into the back of the DA40 or DA60. Internal DSSI cable must be inside the DA40 or DA60.

8 Put four mounting screws into the DA40 or DA60 through the DSSI bracket and secure them with the nuts with lock washers, as shown in Figure 7-13.

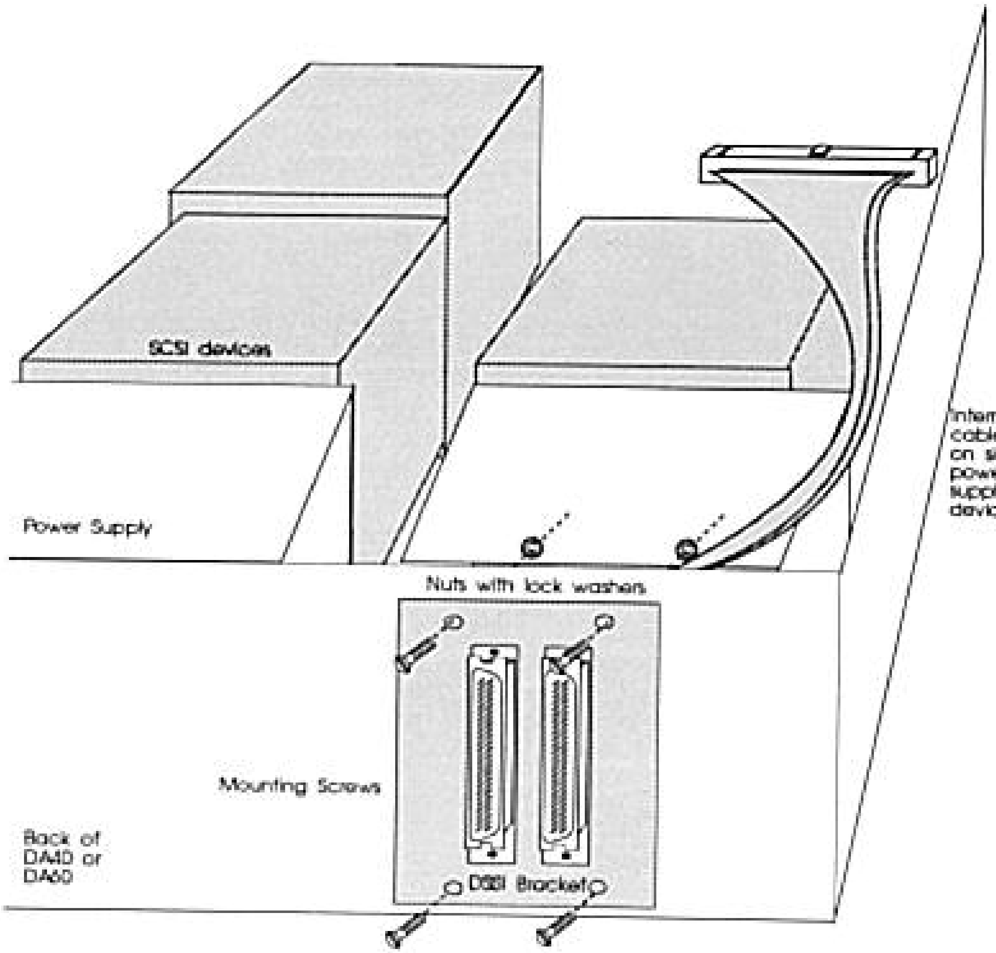


Figure 7-13: Installing the DSSI bracket

9 Connect the internal DSSI cable from the DSSI bracket to the CDI-4000 at J1, DSSI port; see Figure 7-13. Route the internal DSSI cable on the side of the SCSI drives.

WARNING **To prevent damage to the CDI-4000, pin 1 of the DSSI cable connector and pin 1 of J1 of CDI-4000 *must* align.**

8

DUP Utility

After hardware configuration and installation is complete, the operating system software needs to recognize devices located on the DSSI bus. This chapter will assist you in configuring the CDI-4000 to operate correctly with VAX/VMS using DUP Utility through the console, operating system, and using the LCD Front Panel Display.

DUP Utility Using Console

This section walk you through the DUP Utility from the console. Follow these instructions to configure DUP and the CDI-4000 in your system:

NOTE Every DSSI node ID must have a unique system ID and node name. The unit number also needs to be unique for every drive; see "Unit Offset," page 8-4.

1 Be sure all cables are securely connected and termination is correct. See section "Installation." Make sure VMS does not start to boot.

2 With automatic boot disabled, power "ON" the system.

3 At the console prompt, enter the following command:

```
>>>sho dev
```

The screen should display factory default settings for the node name of the CDI-4000 except for the node ID which was set up in "Hardware Configuration."

```
DSSI Node ID 2 (131072)
-DIA200 (RF72)
-DIA210 (RF72)
-DIA250 (RF72)

DSSI Node ID 5 (*)

UQSSP Disk Controller 0 (772150)
-DUA0 (RA82)

Ethernet Adapter
-ESA0 (08-00-2B-13-80-85)
```

Figure 8-1: Example of DSSI node ID configuration

4 Enter at the console prompt:

```
>>>set host/dup/dssi λ  (for VAX 3300's)

>>>set host/dup/dssi/bus:α λ  (for VAX 4000's)
```

where
λ = the DSSI node number of the CDI-4000.
α = the DSSI bus ID number.

NOTE On VAX 4000 systems, you must to specify the correct DSSI bus either *0* or *1* as shown above.

5 At the question *Task Name?* enter:

```
Task Name? params
```

6 At the PARAMS> prompt, enter:

```
PARAMS>sh /all
```

The following will display as factory settings for the CDI-4000:

```
Parameter Name    Active      Min.       Max.          Units
NODENAME          "131072  "     1               8     Ascii
SYSTEMID            131072       1       268435456     DecimalNum
DISK_ALCS                0       0             255     DecimalNum
TAPE_ALCS                0       0             255     DecimalNum
INTERVAL                60       0           32768     Seconds
NUMPOLL                  7       0               7     DecimalNum
UNIT_OFFSET              0       0               9     DecimalNum
SYNC_RATE                8       1              10     DecimalNum
FASTSCAN                 0       0               1     Boolean
SCANNING                 1       0               1     Boolean
DISCONNECT               1       0               1     Boolean
POWERONRST               1       0               1     Boolean
TRYSYNC                  1       0               1     Boolean
```

Figure 8-2: Example of CDI-4000 configuration

The following is a list of the SCS Related Parameters as shown in Figure 8-2.

NODENAME—SCS system node name. This value must be unique among all systems in the VAXcluster. The string may not include dollar sign ($) or underscore (_) characters and is limited to six characters. Factory Default: 131072 + Serial Number

SYSTEMID—specifies the lower-order 32-bits of the 48-bit system identification number. It is the unique identifier of each system. Factory Default: 131072 + Serial Number

DISK_ALCS—determines the device allocation class for all disk devices connected to this DSSI bridge. If disks are to be served to other nodes within the VAXcluster this parameter must be non-zero and match the *ALLOCLASS* SYSGEN parameter on connected systems. Factory Default: 0.

TAPE_ALCS—determines the device allocation class for all tape devices connected to this DSSI bridge. If tapes are to be served to other nodes within the VAXcluster this parameter must be non-zero and match the *TAPE_ALLOCLS* system parameter on connected systems. Factory Default: 0.

INTERVAL—controls the rate at which SCSI Device Scanning is done. This value is only used if *SCANNING* is enabled. Factory Default: 60 seconds.

NUMPOLL—controls the number of SCSI Devices to look for during each *INTERVAL*. This parameter is currently not implemented but will be activated in a future revision of firmware. Factory Default: 7 (all available units each *INTERVAL*).

UNIT_OFFSET—helps differentiate devices when a system has two DSSI buses. Unit Offset is specified as the value to be used in the thousand's position of the MSCP unit ID (shown as 0 in DIA0210 in Figure 8-1) which is automatically created by the system. These unit offset values must be unique for each DSSI bus on the system. Factory Default: 0.

SYNC_RATE—the rate that data is transferred during data phase between target and host.

FASTSCAN—reduces the SCSI Select time-out to a much smaller value. The default Select time-out is 250-msec. This parameter is currently not implemented but will be activated in a future revision of firmware. Factory Default: 0 (disabled).

SCANNING—enables/disables the bridge's ability to scan for newly connected devices. If *SCANNING* is disabled the CDI-4000 will only do ONE scan for devices at power-up and will not look for new devices every *INTERVAL* seconds. Factory Default: 1 (enabled).

DISCONNECT—enables/disables allowing disconnection to all SCSI devices connect to the CDI-4000 bridge. When only one device is connected to the CDI-4000 bridge this should be disabled for performance reasons. Factory Default: 1 (enabled).

POWERONRST—enables/disables the issuance of a *SCSI BUS RESET* on power-up. Factory Default: 1 (enabled).

TRYSYNC—enables/disables the synchronous negotiation upon initialization of a SCSI device. For very short cables synchronous negotiation can be disabled providing better performance in ASYNC mode than in SYNC mode. Factory Default: 1 (enabled).

7. At the PARAMS> prompt, enter:

   PARAMS>***set nodename ALPHA*** for example
   PARAMS>***set systemid 10*** for example

8. Then enter:

   PARAMS>***show /all***

   The following will display:

```
Parameter Name          Active      Min.          Max.   Units
NODENAME              "ALPHA  "        1             8   Ascii
SYSTEMID                    10         1     268435456   DecimalNum
DISK_ALCS                    0         0           255   DecimalNum
TAPE_ALCS                    0         0           255   DecimalNum
INTERVAL                    60         0           255   Seconds
NUMPOLL                      7         0             7   DecimalNum
UNIT_OFFSET                  0         0             9   DecimalNum
SYNC_RATE                    8         1            10   DecimalNum
FASTSCAN                     0         0             1   Boolean
SCANNING                     1         0             1   Boolean
DISCONNECT                   1         0             1   Boolean
POWERONRST                   1         0             1   Boolean
TRYSYNC                      1         0             1   Boolean
```

Figure 8-3: Example of CDI-4000 configuration

9 At the prompt, to save the present changes to NOVRAM on the CDI-4000, enter:

```
PARAMS>write
```

10 At the prompt, to read the new NOVRAM values on the CDI-4000, enter:

```
PARAMS>restart
```

11 To return to the console prompt, enter:

```
^C
>>>
```

NOTE You can also press **[BREAK]** to return to the prompt >>>.

12 At the console prompt, >>>, enter:

```
>>>h
>>>u
>>>i
>>>sho dev
```

DSSI devices will display with their corresponding node ID numbers.

```
DSSI Node ID 2 (ALPHA)
-DIA200 (RF72)
-DIA210 (RF72)
-DIA250 (RF72)

DSSI Node ID 5 (*)

UQSSP Disk Controller 0 (772150)
-DUA0 (RA82)

Ethernet Adapter
-ESA0 (08-00-2B-13-80-85)
```

Figure 8-4: Example of DSSI device configuration

DUP Utility Using VMS

To use DUP commands from VMS, follow these instructions:

1 Connect the device *FYA0* by entering:

```
mc  sysgen connect FYA0/noadapter
```

2 Set the host by entering at the prompt:

```
set  host/dup/task=params/server=mscp$dup  λ
```

Where
λ = name of DSSI node.

This will bring you to the PARAMS prompt; follow instructions given in "Console DUP Configuration."

To configure DSSI when already booted enter:

```
@sys$startup:vms$initial-050_configure  all
```

LCD Front Panel Configuration

This section describes the operation and use of the CDI-4000's LCD front panel user interface. The LCD Front Panel Display can be used to configure devices attached to the CDI-4000 and update setup information in the CDI-4000's non-volatile memory (NOVRAM).

Front Panel LED Indicators

At power-up or board reset, the red fault LED will blink for about 15 seconds indicating that a seft-test operation is in progress. After completion of self-test, the red LED ceases to blink.

During normal operation, the green LED labeled 7, normally OFF, will flicker when there is communication with the host VAX on the DSSI bus. This will not always coincide with I/O activity on the SCSI bus.

Initial Power-On Display

When power is first applied to the CDI-4000, the LCD display shows the following message:

```
CMD Technology, Inc.
CDI-4000, Rev. XXX
```

After five seconds, the CDI-4000 posts the following message on the LCD display that a seft-test procedure is being performed.

```
Performing Self-Test
Please Wait . . .
```

After another ten seconds, the CDI-4000 establishes the default status screen on the LCD display. The Status display provides the operator with some basic information about the current DSSI node as well as what kind of devices are detected on the SCSI bus.

Information about each device is displayed in eight second status intervals. For any given status interval, the first line will contain the MSCP designation for the device currently being displayed along with the DSSI node name in parenthesis. During the first half of a status interval, the device's SCSI ID and LUN are displayed on the lower LCD line along with Drive On-line & Write Protect.

```
$4$DIA100        (DAISY)
ID= 1 LUN= 0NLINE R/W
```

During the second half of the status interval, the device's manufacturer, model number and revision appear on the second line of the LCD display. The information that appears here is extracted from SCSI inquiry data that is requested from the device upon first detection. Only the first seven characters of both the manufacturer's name and model will appear on the display.

```
$4$DIA100        (DAISY)
SEAGATE ST1408N 1234
```

LCD Keys

The Table 8-1 lists the keys to change any parameters.

Table 8-1 LCD Keys

[SEL]	Selects the option to edit.
[↑]	Pages up through the options or field.
[↓]	Pages down through the options or field.
[EXIT]	Exits the option, field or parameters.

Main Setup Menu

To access the various Setup Menus while the Status display is active, press **[SEL]** on the LCD Front Panel. The Setup Menu will appear as shown below with current selection located between square brackets. Use the **[↑]** or **[↓]** buttons to "roll" through the available menu options:

```
  Setup Menu
 [SYS PARAMS]
```

The System-wide sub-menu allows you to view and modify the operational parameters relating to the CDI-4000. To enter this sub-menu, press **[SEL]**:

```
   Setup Menu
[DEVICE PARAMS]
```

The Device sub-menu allows you to view and modify the operational parameters relating to the specific device. To enter this sub-menu, press **[SEL]**:

```
 Setup Menu
 [RESTART]
```

The Restart option allows you to execute a warm restart of the CDI-4000's firmware. This is usually necessary after any non-volatile parameters are updated. Press **[SEL]** to restart the CDI-4000.

Setup Menu
[WRITE]

The Write option is used to update the CDI-4000's non-volatile memory. When any system wide or device parameter is modified, this option must be executed for permanent change in parameters. Press **[SEL]** to save all parameter changes in NOVRAM.

Setup Menu
[FACTORY]

The Factory option allows you to re-establish default factory settings for all system wide and device parameters. After this option is selected, you must execute the write option to save all parameters changes in NOVRAM. Press **[SEL]** to change all parameters back to default.

System-Wide Parameters Menu

When selected from the main setup menu, the system-wide parameters provide you with the means to view and edit various CDI-4000 operational parameters. This section describes each of the parameters.

To review and/or edit, press [↑] or [↓] to "roll" through the parameter field to the desired parameter name. Once the desired parameter is displayed, press **[SEL]** to enter that field from which to edit.

During parameter editing, press [↑] or [↓] to change the character above the cursor. Press **[SEL]** to select the character and move to the next character in the field and then out of the field. If the CDI-4000 detects an invalid field value, the original parameter value is re-displayed. Press **[EXIT]** at any time to abort a parameter change.

Node name
[THUMPER]

Node name refers to the SCS system node name. This value must be unique among all systems in the VAXcluster. The value may not include embedded blanks. The factory default value is 131072+ the board serial number.

```
System ID
 [XXXX]
```

System ID refers to the low order 32 bits of the 48-bit system ID number. It is the unique identifier of each system. Factory default is 131072+ board serial number.

```
Disk Alloc Class
     [4   ]
```

The Disk Allocation Class parameter determines the device allocation class for all direct access storage devices connected to the SCSI bus. If these devices are to serve other nodes within a VAXcluster, this parameter must be non-zero and match the *ALLOCLASS SYSGEN* parameters on connected systems. Factory default is 0.

```
Tape Alloc Class
     [4   ]
```

The Tape Allocation Class parameter determines the device allocation class for all sequential access storage devices connected to the SCSI bus. If these devices are to serve other nodes within a VAXcluster, this parameter must be non-zero and match the *ALLOCLASS SYSGEN* parameters on connected systems. Factory default is 0.

```
 Poll Interval
    [60  ]
```

This parameter determines at what rate the SCSI bus will be scanned for new devices coming on-line. This value is only used if *BUS SCAN* is turned ON. Factory default is 60 seconds.

```
Number to Poll
    [7   ]
```

This parameter determines the number of SCSI devices to look for during each poll interval. This parameter is currently not implemented, but will be activated in a future revision of firmware. Factory default is seven devices (all available units each interval).

Bus Scan
[ON]

This parameter enables/disables the bridge's ability to scan for newly connected devices. If *BUS SCAN* is disabled, the CDI-4000 will only do ONE scan for devices at power-up and not look for new devices every polling interval. Factory Default: ON.

Fast Scan
[OFF]

This parameter reduces the SCSI Select time-out to a much smaller value. The default Select time-out is 250-msec. This parameter is currently not implemented but will be activated in a future revision of firmware. Factory Default: 0FF.

Disconnect
[ON]

This parameter allows you to disconnect all SCSI devices connected to the CDI-4000 bridge. When only one device is connected to the CDI-4000 bridge this should be disabled for performance reasons. Factory Default: ON.

Reset on Powerup
[ON]

This parameter allows you to enable or disable the issuance of a SCSI Bus reset on power-up. Factory Default: ON.

Try Sync Neg
[ON]

This parameter allows you to specify the synchronous negotiation upon initialization of a SCSI device. For very short cables synchronous negotiation can be disabled providing better performance in ASYNC mode than in SYNC mode. Factory Default: ON.

```
     Unit Offset
       [2  ]
```

This parameter helps differentiate devices when a system has two DSSI buses. Unit Offset is specified as the value to be used in the thousand's position of the MSCP unit ID (shown as 0 in DIA0210 in Figure 4-1) which is automatically created by the system. These unit offset values must be unique for each DSSI bus on the system. Factory Default: 0.

```
     Sync Rate
       [7  ]
```

This parameter specifies the maximum rate for which the CDI-4000 will negotiate during synchronous tranfers. Factory is 8-MB/sec.

Device Parameters Menu

Device Parameters Menu provides you with the options for setting on-line and write protect features for all target IDs on the SCSI bus. Press [↑] or [↓] to "roll" through the list of target devices on the SCSI bus. Write protect for the target ID appears first, then on-line status. Press **[SEL]** to modify these fields using the same techniques described in the previous sub-section.

```
  ID Write Protect
       [OFF]
```

Write Protect is used to prevent the host from writing on the specified target ID. When a target ID is write protected, all logical units (LUNs) for that target will also be protected.

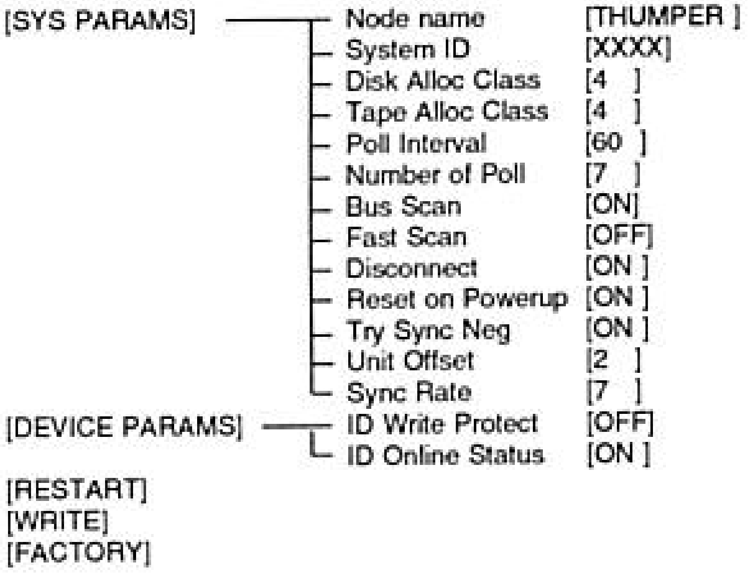
```
 ID On-line Status
       [ON ]
```

The On-line Status parameter is used to indicate to the host whether the target device is on-line. The online/offline status is applicable to all logical units for the specified target ID.

When using the [↑] or [↓] to "roll" through the list of devices, the ID representing the CDI-4000 SCSI initiator will be skipped. Changed to any device status will not take effect until control is returned to the main setup menu. On-line and write protect status is preserved in NOVRAM.

Overview

The Figure 8-5 displays settings that can be made from LCD.



```
[SYS PARAMS]     ──┬─ Node name          [THUMPER ]
                   ├─ System ID          [XXXX]
                   ├─ Disk Alloc Class   [4  ]
                   ├─ Tape Alloc Class   [4  ]
                   ├─ Poll Interval      [60 ]
                   ├─ Number of Poll     [7  ]
                   ├─ Bus Scan           [ON]
                   ├─ Fast Scan          [OFF]
                   ├─ Disconnect         [ON ]
                   ├─ Reset on Powerup   [ON ]
                   ├─ Try Sync Neg       [ON ]
                   ├─ Unit Offset        [2  ]
                   └─ Sync Rate          [7  ]
[DEVICE PARAMS]  ──┬─ ID Write Protect   [OFF]
                   └─ ID Online Status   [ON ]
[RESTART]
[WRITE]
[FACTORY]
```

Figure 8-5: LCD Display Parameters

Naming Conventions Example

Figure 4-6 is an example of the naming conventions of a device attached to the CDI-4000. The CDI-4000 will be set to a node ID of 1 in Figure 8-6; the unit offset, 2; the SCSI ID of the device, 3; and the SCSI LUN of the device, 4.

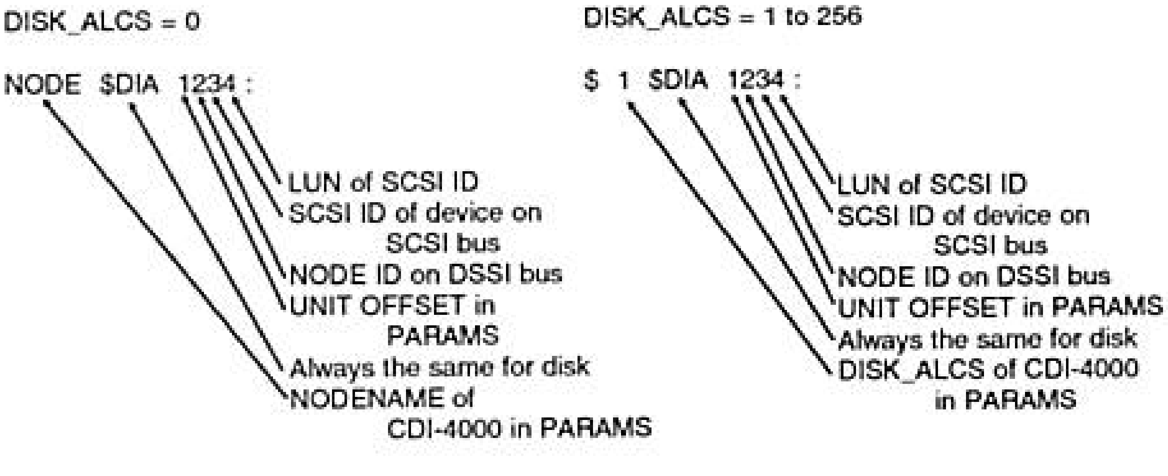


Figure 8-6: Naming Conventions

Appendix A

Supported Systems and Devices

This appendix lists all SCSI devices and operating systems supported by the CDI-4000.

Systems Supported

VAX 4000–200
VAX 4000–300
VAX 4000–500
VAX 3300
VAX3400

Operating System Supported

VMS version 5.3 through 5.5.
ULTRIX 4.0 through 4.2

SCSI Devices

The following is a list of all SCSI devices that are supported by the CDI-4000. *Italics* indicates new qualified device.

Magnetic disk drives

Seagate	WREN VI, WREN VII, WREN VIII, WREN IX, Elite-I, Elite-II
Fujitsu	2263, 2266
DEC	DSP series
HITACHI	*DK516C* , *DK515C*

More disk drives will be qualified soon.

Appendix B

Troubleshooting

This appendix assists you in troubleshooting minor problems that may occur.

Cables

If the system does not recognize the CDI-4000 or devices connected, check the following:

- Make sure pin 1 on the cable is aligned with pin 1 on the SCSI device or CDI-4000. Make sure pins are *NOT* bent.
- Make sure the cable is not longer than 20 feet total for internal and external cables.

LED Indicators

When the system boots DS1, the Red LED, will blink 15 times then turn off.. If the Red LED is still lit after 15 counts after boot, call CMD technical support at (800) 426-3832 or (714) 454-0800.

CMD Technical Support

Having a CMD board entitles you to responsive technical support. Before you call CMD Technical Support, please gather the information listed below that pertains to your configuration. Make a note of any on-screen messages when a problem occurs and have this manual close by.

CMD	CMD product model number and serial number. Firmware Rev. of CMD board as shown on Eprom on the CDI-4000 with a blue CMD logo and copyright label. Listing of jumper settings on the board. Distributer company and contact.
SCSI	SCSI devices model numbers and firmware Rev. as displayed using the On-Board Utility. Settings of SCSI ID numbers of all devices.
Computer	Computer model. Operating System version. Complete listing of other controllers in computer backplane. Specify multi-hosting or clustering.
Problem	Describe exact nature of problem. Specify detailed error messages. Specify any recent modification to the system. Is this a new installation? Does the problem occur consistently? Does the problem occur when you do not use the board? Does the problem occur with another system (if available)?

You may contact CMD Technical Support from 8:30 AM to 5:30 PM, Pacific Standard Time, Monday through Friday, excluding major holidays, at:

(714) 454-0800 or
(800) 426-3832 or
(714) 455-1656 FAX

Appendix C

Connectors and Jumper Settings

This appendix lists connectors and jumper settings for the CDI-4000.

Connectors

Table C-1 list connectors for the CDI-4000.

Table C-1 Connectors

J1	DSSI Interconnect to the host computer
J2	SCSI Interconnect to SCSI devices
J3	Power connector: Pin 1 no connection Pin 2 ground Pin 3 ground Pin 4 +5 volts (1.5 Amps)
J4	Serial Port to be used for RS-232 Port
J5	LCD Display Port
J6	ISE and LCD Front Panel

Figure C-1 illustrates the pin locations of the CDI-4000 non-shielded SCSI device connector (J2).

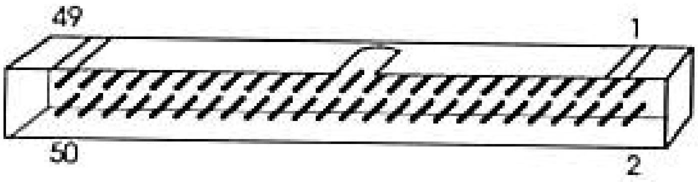


Figure C-1: Non-shielded SCSI device connector

Table C-2 shows the CDI-4000 SCSI Port, J2, connector pin assignments.

NOTE All odd pins except pin 25 are connected to ground. Pin 25 is left open. The minus sign next to the signal indicates active low.

Table C-2 SCSI Port (J2) Connector Pin Assignments

Signal	Pin Number
-DB(0)	2
-DB(1)	4
-DB(2)	6
-DB(3)	8
-DB(4)	10
-DB(5)	12
-DB(6)	14
-DB(7)	16
-DB(P)	18
GROUND	20
GROUND	22
GROUND	24
TERMPWR	26
GROUND	28
GROUND	30
-ATN	32
GROUND	34
-BSY	36
-ACK	38
-RST	40
-MSG	42
-SEL	44
-C/D	46
-REQ	48
-I/O	50

Figure C-2 illustrates the RS-232 Port connector, J4, pin assignments.

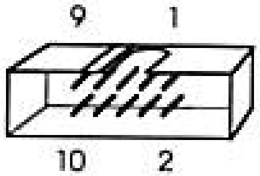


Figure C-2: J4

Table C-3 lists the pin assignments for the J4, RS-232 Port.

Table C-3 J4, RS-232 Port Connector Pin Assignments

Pin 1	No Connection
Pin 2	Ground
Pin 3	Transmit Data
Pin 4	Ground
Pin 5	No Connection
Pin 6	No Connection
Pin 7	No Connection
Pin 8	Receive Data
Pin 9	Ground
Pin 10	No Connection

Figure C-3 illustrates the J5 and J6 connector pin assignments.

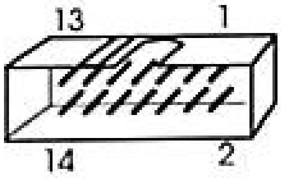


Figure C-3: J6 and J5

Table C-4 lists the pin assignments for the J5, LCD Display Port Connector.

Table C-4 J5, LCD Display Port Connector Pin Assignments

Pin 1	Ground
Pin 2	+5 volts power
Pin 3	Voltage Contrast Control
Pin 4	Register Select
Pin 5	Write (tied to Ground)
Pin 6	Display Clock enable/disable
Pin 7	Data Bit 0
Pin 8	Data Bit 1
Pin 9	Data Bit 2
Pin 10	Data Bit 3
Pin 11	Data Bit 4
Pin 12	Data Bit 5
Pin 13	Data Bit 6
Pin 14	Data Bit 7

Table C-5 lists the pin assignments for the J6, ISE and LCD Front Panel Connector.

Table C-5 J6, ISE and LCD Front Panel Connector Pin Assignments

Pin	ISE Front Panel	LCD Front Panel
1	High Temperature Sensor	Up Arrow Key Input
2	Ground	Ground
3	No Connection	No Connection
4	Ground	Ground
5	Activity Indicator for Green LED	Activity Indicator for Green LED
6	Fault Indicator shown by the Square Red LED	Fault Indicator shown by the Square Red LED
7	No Connection	Select Key Input
8	Write Protect Switch	Down Arrow Key Input
9	Ground	Ground
10	On-Line Switch for Front Panel	Exit Key Input
11	+5 volts power	+5 volts power
12	PCB Rotary Switch designating DSSI Node Selector and drives the digital display	Pin 5 Feedback Input
13	PCB Rotary Switch designating DSSI Node Selector and drives the digital display	Reserved
14	PCB Rotary Switch designating DSSI Node Selector and drives the digital display	Reserved

Jumper Settings

Table C-6 lists the DSSI Port (J1) ID jumper selections.

Table C-6 DSSI Port (J1) ID Jumper Selections

CDI-4000 DSSI ID	W6-1	W6-2	W6-3
7	IN	IN	IN
6	IN	IN	OUT
5	IN	OUT	IN
4	IN	OUT	OUT
3	OUT	IN	IN
2	OUT	IN	OUT
1	OUT	OUT	IN
0 (F)	OUT	OUT	OUT

Note that (F) means factory setting.

Table C-7 lists the SCSI Port (J2) ID jumper selections.

Table C-7 SCSI Port (J2) ID Jumper Selections

CDI-4000 SCSI ID	W7-1	W7-2	W7-3
7 (F)	IN	IN	IN
6	IN	IN	OUT
5	IN	OUT	IN
4	IN	OUT	OUT
3	OUT	IN	IN
2	OUT	IN	OUT
1	OUT	OUT	IN
0	OUT	OUT	OUT

Note that (F) means factory setting.

Table C-8 lists the jumper settings for the CDI-4000.

Table C-8 Jumper Settings

W1	IN	DSSI Port J1 Term power supplied (F)
W1	OUT	DSSI Port J1 Term power not supplied
W2	IN (wire)	Reserved (F)
W3	OUT	Reserved (F)
W4	1-2 IN	EPROM Size 27H010
W4	2-3 IN	EPROM Size 27H256, 27H512 (F)
W5	OUT	Reserved (F)
W6-4, W6-5, W6-6	OUT	Reserved (F)
W7-4, W7-5	OUT	Reserved (F)
W8	OUT	Reserved (F)
W9	1-2 IN	SW1 is Reset Switch (F)
W9	2-3 IN	SW1 is NMI Switch
W10	ALL OUT	Reserved (F)
W11	1-2 IN	SCSI Port J2 Termination— Active (F)
W11	2-3 IN	SCSI Port J2 Termination—Passive
W12	IN	SCSI Port J2 Term power supplied (F)
W12	OUT	SCSI Port J2 Term power not supplied

Note that (F) means factory setting.

Table C-9 lists the jumper settings on LCD Front Panel Display.

Table C-9 Jumper Settings on LCD Front Panel Display

W1	1-2 IN	LCD Contrast Control from Front Pan.(F)
W1	2-3 IN	LCD Contrast Control from CDI-4000
J12, J13	1-2 IN	Normal Closed Thermal Port(F)
J14, J15	1-2 IN	Normal Open Thermal Port

Appendix D

Advanced VAXclustering

This Appendix briefly explains setting up your CDI-4000 into a VAXcluster environment. There are System Information Tables in which you may enter your system information to determine specific *SCSNODE, ALLOCLASS, SCSSYSTEMID* and *SYSTEM TYPE* for each system in your configuration.

System Information

Before attempting to install the CDI-4000 into a VAXcluster, see the examples in Tables D-1 to D-4 for VAXcluster configuration.

Refer to Digital documentation for complete VAXclustering information.

Tables D-1 to D-4 illustrate an example of a VAXcluster.

NOTE Information located in these Tables shows the existing configuration; open slots are locations for which the CDI-4000 can be connected.

Table D-1 System 1, DSSI Bus 0

DSSI Node #	SCSNODE	ALLOCLASS	SCSSYSTEMID	SYSTEM TYPE
0	RF72A	2	20	DEC RF72 DSK
1				
2				
3				
4				
5				
6	V4200A	2	1028	VAX4000-200
7 *	V4300	2	1026	VAX4000-300

* Indicates System DSSI ID

Table D-2 System 1, DSSI Bus 1

DSSI Node #	SCSNODE	ALLOCLASS	SCSSYSTEMID	SYSTEM TYPE
0	RF72B	2	21	DEC RF72 DSK
1				
2				
3				
4				
5				
6	V4200B	2	1029	VAX4000-200
7 *	V4300	2	1026	VAX4000-300

* Indicates System DSSI ID

Table D-3 System 2, DSSI Bus 0

DSSI Node #	SCSNODE	ALLOCLASS	SCSSYSTEMID	SYSTEM TYPE
0	RF72B	2	21	DEC RF72 DSK
1				
2				
3				
4				
5				
6 *	V4200A	2	1029	VAX4000-200
7	V4300	2	1026	VAX4000-300

* Indicates System DSSI ID

Table D-4 System 3, DSSI Bus 0

DSSI Node #	SCSNODE	ALLOCLASS	SCSSYSTEMID	SYSTEM TYPE
0	RF72A	2	20	DEC RF72 DSK
1				
2				
3				
4				
5				
6 *	V4200A	2	1028	VAX4000-200
7	V4300	2	1026	VAX4000-300

* Indicates System DSSI ID

Figure D-1 shows the VAXcluster setup using different DSSI buses.

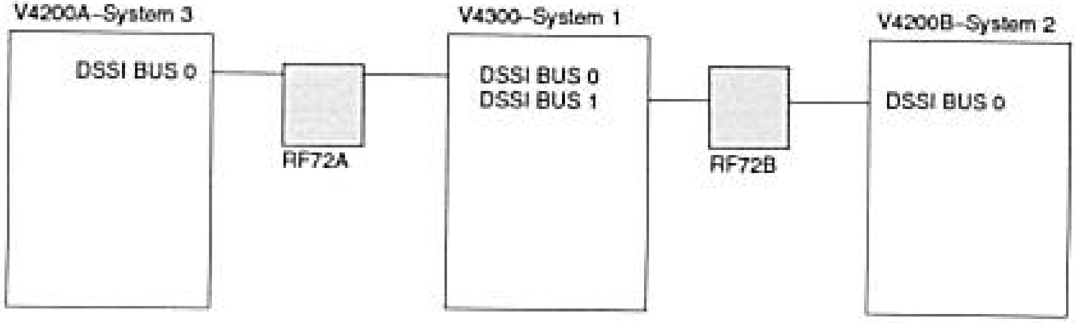


Figure D-1: Example of VAXcluster

Figuring Your System Configuration

Use the charts below to assist you in determining the system information. Record the information in the spaces provided.

Table D-5 **System _____, DSSI Bus _____**

DSSI Node #	SCSNODE	ALLOCLASS	SCSSYSTEMID	SYSTEM TYPE
0				
1				
2				
3				
4				
5				
6				
7 *				

* Indicates System DSSI ID

Table D-6 **System _____, DSSI Bus _____**

DSSI Node #	SCSNODE	ALLOCLASS	SCSSYSTEMID	SYSTEM TYPE
0				
1				
2				
3				
4				
5				
6				
7 *				

* Indicates System DSSI ID

Table D-7 **System _____, DSSI Bus _____**

DSSI Node #	SCSNODE	ALLOCLASS	SCSSYSTEMID	SYSTEM TYPE
0				
1				
2				
3				
4				
5				
6				
7 *				

* Indicates System DSSI ID

Table D-8 **System _____, DSSI Bus _____**

DSSI Node #	SCSNODE	ALLOCLASS	SCSSYSTEMID	SYSTEM TYPE
0				
1				
2				
3				
4				
5				
6				
7 *				

* Indicates System DSSI ID

Glossary

The following is a glossary of frequently used SCSI terms.

Connect—The function that occurs when an initiator selects a target to start an operation.

Device—A host computer adapter or a peripheral controller or an intelligent peripheral that can be attatched to the SCSI bus.

Disconnect—The function that occurs when a target release control of the SCSI bus, allowing it to go to the BUS FREE phase.

DSSI—Digital systems storage interface.

Initiator—A SCSI device (usually a host system) that requests an operation to be performed by another SCSI device.

LUN—Logic Unit Number.

Peripheral device—A peripheral that can be attatched to an SCSI device (e.g., magnetic disk, magnetic tape, or optical disk).

Reconnect —The function that occurs when a target selects an initiator to continue an operation after a disconnect.

SCSI — Small computer systems interface.

SCSI address—The octal representation of the unique address (0-7) assigned to an SCSI device. This address would normally be assigned and set in the SCSI device during system installation.

SCSI ID—The bit-significant representation of the SCSI address referring to one of the signal lines DB (7-0).

SCSI device—A host computer adapter or a peripheral controller or an intelligent peripheral that can be attatched to the SCSI bus.

Target—A SCSI device that performs an operation requested by an initiator.

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